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ANNUAL REPORT

OF THE

SURGEON-GENERAL

OF THE

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE OF THE UNITED STATES

FOR THE

FISCAL YEAR 1902.

WASHINGTON:
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OPERATIONS

OF THE

UNITED STATES PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

1902.

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LETTER OF TRANSMITTAL.

TREASURY DEPARTMENT,
Washington, December 2, 1902.

SIR: In accordance with section 9 of the act of Congress approved July 1, 1902, entitled "An act to increase the efficiency and change the name of the Marine-Hospital Service," I have the honor to transmit herewith the annual report of the Surgeon-General of the Public Health and Marine-Hospital Service of the United States for the fiscal year 1902.

Respectfully,

L. M. SHAW,
Secretary.

To the SPEAKER OF THE HOUSE OF REPRESENTATIVES.

ANNUAL REPORT

OF THE

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

REPORT TO THE SECRETARY.

TREASURY DEPARTMENT,
BUREAU OF PUBLIC HEALTH AND
MARINE-HOSPITAL SERVICE,
Washington, D. C., November 1, 1902.

Hon. LESLIE M. SHAW,
Secretary of the Treasury.

SIR: I have the honor to submit, for transmission to Congress, in compliance with the act of July 1, 1902, the following report of transactions of the Public Health and Marine-Hospital Service of the United States for the fiscal year ended June 30, 1902, the same being the thirty-first annual report of the Service, in the one hundred and fourth year of its existence, and the first annual report under its new name (act of Congress, July 1, 1902).

In addition to the information pertaining to the fiscal year 1902, the operations of the Service in regard to quarantine and public-health matters are narrated to the present date.

PERSONNEL.

At the close of the fiscal year the commissioned corps of the Service consisted of 105 commissioned officers, including the Surgeon-General; 29 surgeons, 27 passed assistant surgeons, and 48 assistant surgeons. During the year 1 surgeon resigned, 1 passed assistant surgeon was promoted to the grade of surgeon, and 5 assistant surgeons were promoted to the grade of passed assistant surgeon. At the close of the fiscal year there were 181 acting assistant surgeons, 2 sanitary inspectors, 46 pharmacists, and 539 hospital and quarantine attendants.

Two boards were convened for the examination of officers for promotion from the grade of assistant surgeon to that of passed assistant surgeon, and all officers ordered before said boards for promotion passed successful examinations and were promoted.

One board was convened for the examination of such applicants as might present themselves for admission to the medical corps as assistant surgeons of the Service. The session of this board was not completed at the close of the fiscal year ending June 30, 1902. Twenty-four boards were convened for the physical examination of line and engineer officers of the Revenue-Cutter Service and of the Coast and Geodetic Survey.

ACCOUNTS.

The balance of the appropriation for the expenses of the Marine-Hospital Service at the commencement of the fiscal year was $726,752.74, and the receipts from all sources were $908,435.54. The net expenditures were $956,434.69, including expenditures for the improvements of marine hospitals and grounds, and for repairs, heating apparatus, furniture, fuel, light, and water, these items having been excluded by Congress from participation in the annual appropriations and made payable from the marine-hospital fund.

The amount available of the appropriation for preventing the spread of epidemic diseases, July 1, 1901, was $799,561.81, and the expenditures for the fiscal year, $145,471.71, leaving a net balance July 1, 1902, of $654,090.10.

MARINE HOSPITALS AND RELIEF.

During the fiscal year ended June 30, 1902, 56,310 sick and disabled seamen of the merchant marine were treated, of which number 12,927 were treated in hospital.

The Service controls and operates 23 hospitals, of which 21 are owned by the United States and 2 are leased buildings. In addition to the hospitals there are 120 relief stations where seamen receive hospital and dispensary treatment. Relief stations have been established at Houghton, Mich., Hoquiam, Wash., and Sheboygan, Wis.

NEW HOSPITALS.

As recommended in the last report of the Secretary of the Treasury, provision was made by Congress for a marine hospital at New York, N. Y., by an appropriation of $250,000 for the purchase of the site and building now occupied, or purchase of a new site and erection of a building. Negotiations are now in progress for carrying out the intent of this provision.

Congress also authorized and made appropriations for marine hospitals at Buffalo, Pittsburg, and Savannah, and measures have been taken toward selecting sites and erecting buildings for the same.

SANATORIUM FOR TUBERCULOUS PATIENTS, FORT STANTON, N. MEX.

The relief transactions of the sanatorium for consumptives at Fort Stanton, N. Mex., have markedly increased, 212 patients having been treated during the year, an excess of 60 over the previous year. The repair of the buildings is proceeding as rapidly as possible, and it is expected that under the present system of cattle raising and farming in a short time the greater portion, if not all, of the meats, vegetables, and fruits consumed at the station will be produced on the reservation.

As a further measure to limit the spread of tuberculosis among seamen, instructions have been issued to officers of the Service to disinfect, whenever practicable, the quarters on shipboard which have been occupied by seamen seeking relief on account of pulmonary consumption. It is believed that such infected quarters are responsible for a considerable proportion of cases of this disease occurring among merchant seamen.

I would urgently recommend as a sanitary and prophylactic measure the expediency of receiving upon the large reservation now at the disposal of the Service at Fort Stanton such cases of tuberculosis as may be sent there by State health authorities for treatment, upon the payment of a per diem rate, to be based upon the cost of maintenance. This measure would result in the cure of many ill with a disease incurable under general conditions of environment, and would diminish centers of infection established by these patients in their homes, and such a provision would materially aid in the various and well-directed efforts now being made for the suppression of the disease in the United States.

PURVEYING DEPOT AT NEW YORK.

During the year 662 requisitions were filled by the purveying depot in New York City, and supplies were furnished to marine hospitals and to quarantine stations of the Service in the United States and its insular possessions. Through this depot medical supplies have been purveyed for the Immigration Service, and for vessels of the Revenue-Cutter Service and of the Coast and Geodetic Survey.

AID TO OTHER SERVICES.

During the year the Service has extended aid to other branches of the Government, as follows: To the Revenue-Cutter Service in the physical examination of 800 applicants for enlistment, 145 of whom were rejected; to the Steamboat Inspection Service in the examination as to visual capacity of 1,759 pilots, of whom 85 were rejected; to the Life-Saving Service in the physical examination of 1,045 surfmen, of whom 58 were rejected; to the Immigration Service in the medical inspection of 746,297 immigrants arriving at the various ports of the United States and Cuba; to the Coast and Geodetic Survey and Light-House Service in the physical examination of 27 applicants for enlistment, of whom 1 was rejected.

SANITARY REPORTS AND STATISTICS.

The Bureau has issued, in accordance with law, weekly public health reports, containing all available sanitary information and vital statistics. These reports are sent to the quarantines and to State and municipal health officials, United States consuls, and others, and are relied upon as the chief source of information upon the important and specific topics therein included.

YELLOW FEVER.

There has been no yellow fever reported in the United States during the past year. Reports have been received of the existence of the disease in Brazil, United States of Colombia, Costa Rica, Cuba, Dutch West Indies, Haiti, Mexico, and Salvador. Mexico has furnished a large proportion of the cases reported, and Cuba, which has heretofore reported a large number of cases every year, has reported only 61 cases and 14 deaths for the six months ended December 31, 1901, and but 1 case and no death for the six months ended June 30, 1902, and this single case was an imported one.

PLAGUE.

In the United States (San Francisco, Cal.), since November 1, 1901, the date of my last report, 39 cases of plague have been reported, all but one of which resulted in death. This disease has been reported as existent during the fiscal year 1902 in the following-named countries: Australia, Brazil, British South Africa, China, Egypt, England, France, Hawaiian Islands, India, Italy, Japan, Madagascar, Mauritius, Mozambique, Paraguay, Philippine Islands, Russia, Scotland, Spain, Straits Settlements, and Turkey.

SMALLPOX.

During the year smallpox has been reported as occurring in 44 States and Territories of the Union. The number of cases reported for the year ended June 30, 1902, was 55,857; deaths, 1,852; a mortality of 3.31 per cent, as compared with 38,506 cases and 689 deaths during the year ended June 30, 1901.

FOREIGN AND INSULAR QUARANTINE AND IMMIGRATION.

Maritime quarantine has been conducted in Cuba, Porto Rico, Hawaii, and the Philippines.

PHILIPPINES.

The severe outbreak of cholera in the island of Luzon has necessitated the maintenance of a stringent quarantine on outgoing vessels from Manila to the uninfected ports of the Philippines, as well as to those of the United States and its insular possessions. The station recently fitted up at Mariveles, across the bay from Manila, has been of the greatest assistance for the detention and disinfection and observation of the personnel of vessels on which cholera has appeared. A quarantine of five days has been imposed on army transports before they sail for the United States, as an outbreak of cholera on a crowded troop-ship at sea would be a most serious occurrence. Acting assistant surgeons are stationed at Iloilo and Cebu.

CUBA.

There are five fully equipped quarantine stations in Cuba—at Habana, Matanzas, Nuevitas, Santiago, and Cienfuegos. There were fourteen inspecting stations in Cuba, which were operated by acting assistant surgeons until May 20, 1902, when the United States formally transferred the government of Cuba to the Cuban officials. Since this date the accredited medical officers of the Service have been attached to the consulates at their respective ports. While the quarantine inspection of incoming vessels has been turned over to the Cuban authorities at these five ports since May 20, 1902, all vessels departing for the United States are still inspected and certified to by medical officers of the Service.

PORTO RICO.

The quarantine service in Porto Rico has been conducted upon the same lines as for the last fiscal year. The disinfecting barge *Argus* has been sent to Ponce, where she is moored in the harbor, to be used for the disinfection of vessels. Miraflores Island, at San Juan, Porto Rico, has recently been transferred by Executive order to the Service and is now used as a quarantine station.

HAWAII.

During the year a question was raised as to the validity of the title of the Service to the quarantine island at Honolulu, but information has been received from the United States district attorney at Honolulu that the question has been finally settled, and upon receipt of the proper papers the necessary repairs to the buildings and extension of the plant, delayed while the matter was in litigation, will be proceeded with.

FOREIGN PORTS.

Medical officers have been stationed at the ports of London, Liverpool, and Naples, at Quebec, Canada, and Halifax, Nova Scotia. During the active quarantine season medical officers have been stationed at seven fruit ports of Central and South America to inspect fruit vessels departing for United States ports. Officers have been detailed for duty at Yokohama and Kobe, Japan; Hongkong, China; Rio de Janeiro, Brazil; and Vera Cruz, Progreso, and Tampico, Mexico; and one has recently been sent to Shanghai, China. There is also a sanitary inspector at Nagasaki, Japan.

MEDICAL INSPECTION OF IMMIGRANTS.

The medical inspection of arriving immigrants was performed at thirty-two ports during the year by medical officers of the Service detailed for the purpose; also, at the ports of the islands of Porto Rico and Hawaii. Immigrants were also inspected at Quebec, Canada, and Halifax, Nova Scotia. Emigrants leaving Naples and Palermo for the United States are inspected by a medical officer whose post of duty is at the former place.

DOMESTIC QUARANTINE.

During the year 5,828 vessels were inspected at national quarantine stations, and 420 vessels were detained and disinfected. At the close of the fiscal year, June 30, 1902, the Service owned 19 complete maritime quarantine stations, and in addition operated 18 stations where inspections of incoming vessels were conducted by officers of the Service, thus making a total of 37 stations. In addition to these stations there are 8 others completely equipped, and 12 inspection stations conducted by States and municipalities within the boundaries of the United States.

In January, 1902, the quarantine functions at Portland, Me., were transferred to and accepted by the Service under the provisions of the act of Congress approved February 15, 1893, as in like manner the quarantine station and functions at Savannah, Ga., had been acquired in April, 1899, and the quarantine stations of Florida in August, 1901.

Provision was made in the sundry civil bill, approved June 28, 1902, for the purchase of the Florida quarantine stations thus transferred.

TEXAS-MEXICAN BORDER QUARANTINE.

With a view to the prevention of the introduction of yellow fever, smallpox, and typhus fever from the Republic of Mexico, land quarantines were maintained at El Paso, Eagle Pass, and Laredo, Tex., and these stations have been operated with the cooperation of the United States inspectors of immigration. Over 50,000 passengers have been inspected, and 25 were detained for observation and the disinfection of their baggage.

PLAGUE IN SAN FRANCISCO.

Bubonic plague, the existence of which was first reported in San Francisco, Cal., on March 7, 1900, was the subject of investigation by a commission appointed by the Department, consisting of three bacteriologists of the highest reputation, and the report of this commission, as may be seen in the last annual report, was amply confirmatory in character. In spite of the work which was done in the spring of 1901 looking to its eradication from Chinatown in the city of San Francisco, the disease continues to be occasionally reported. The plan of operations adopted during the previous year has been continued, and the Service has maintained during the past year an organization in San Francisco, capable of immediate enlargement, which has continued the work of assisting the local board of health by examination of the sick and dead in the infected quarter of the city, and by reporting all suspicious cases which have occurred. Cases confirmed by bacteriological examination have been systematically published in the Public Health Reports of the Service.

There were no cases in June, 1902; there were 4 cases in July; but in August, September, and October the disease increased, there being 28 cases during these three months. The first matter of concern was as to the spread of plague from San Francisco to other portions of the State. I had already caused to be examined several towns and localities without result, but there were still rumors which it was necessary to have set at rest. Accordingly Surg. A. H. Glennan, who was then chief quarantine officer of the island of Cuba, was detailed for this duty. The correspondence, together with other details, will be found set forth at sufficient length in the report from the division of domestic quarantine.

At the annual conference of the State and Provincial boards of health of North America, held at New Haven, Conn., October 28-29 of this year, resolutions were adopted advising the various State boards of health to consider the propriety of calling upon the Surgeon-General of the Public Health and Marine-Hospital Service for a joint conference regarding the situation in California.

SMALLPOX.

I would invite attention to the general prevalence of smallpox throughout the United States as shown in the report of the division of sanitary reports and statistics. As this disease is a distinctly and typically preventable one, I take this opportunity for calling the attention of State and municipal health authorities to the great object lesson thus presented of the necessity of general and systematic vaccination and revaccination for the prevention of the spread and the ultimate suppression of the disease. The Service has rendered assistance to health authorities by detailing experienced officers to advise and assist them in formulating and putting into execution proper measures for the prevention and suppression of smallpox, and in addition Bureau publications on smallpox have been systematically mailed to the health or other authorities of every place in which the appearance of smallpox has been announced in the public press.

On account of the outbreak of smallpox at nearby points in New Brunswick, Canada, and at the request of the health authorities of the State of Maine a border quarantine station was established at Vanceboro and a maritime quarantine at Eastport, which latter is still in operation.

LEPROSY IN THE UNITED STATES.

The report of the commission of medical officers of this Service, appointed under act of March 2, 1899, to investigate the origin and prevalence of leprosy in the United States and report upon legislation necessary for the prevention of its spread, was submitted to Congress at its last session and has been published as Senate Document No. 269 (Fifty-seventh Congress, first session). The report shows the presence in the United States of 278 cases of leprosy, but the commission states that this can not be a complete census on account of the difficulties encountered and the impossibility of discovering all cases of leprosy in the United States at any one time. Of the 278 cases 145 were born in the United States, 120 in foreign countries, and the birthplaces of the remaining 13 are unknown. Of the total number, as reported to the commission, 186 are given as having probably contracted the disease in the United States, but the commission points out that some of these may have brought the disease with them from foreign lands.

Of the States and Territories of the United States 21 are known to have lepers, showing the broad distribution of the disease throughout the country.

The report of the commission states that the number of cases of leprosy in the United States is smaller than is generally believed; that leprosy is conveyed from one person to another in the United States, such conveyance being most markedly noticeable in the States on the southern coast; that over 73 per cent of the cases in the United States are at large; and that at the present time only 72 of the cases are isolated and provided for by the States or cities in which they are located.

The commission recommends the establishment of at least one national leprosarium for the care and treatment of these unfortunate people to be maintained by and under the supervision of the General Government.

In accordance with the above recommendations a bill will be prepared and submitted to you for approval, and, if approved, submitted for the consideration of Congress.

SCIENTIFIC RESEARCH.

This division has reviewed during the year the literature of scientific research as applied to preventive medicine and sanitary science, and has suggested such topics as should be the subject of special investigation in the hygienic laboratory of the Service.

YELLOW-FEVER INSTITUTE.

The yellow-fever institute, of which mention was made in my previous report, has continued its operations and has from time to time published bulletins upon subjects connected with the history, epidemiology, and methods of spread of yellow fever.

In May, 1902, a working party composed of medical officers of the Marine-Hospital Service was dispatched to Vera Cruz, Mexico, to continue experimental investigations into the cause of yellow fever and the instrumentality of the mosquito in the transmission of the disease. The work of the party is still in progress, and it is gratifying in this connection to be able to record the very cordial reception extended to the members of the party by the Mexican officials and to acknowledge the facilities which have been placed at their disposal.

HYGIENIC LABORATORY.

The laboratory building appropriated for by act of Congress approved March 3, 1901, is now in course of erection under the direction of the Supervising Architect, and when it is completed the hygienic laboratory will be provided with more ample quarters, and the present overcrowded condition will be relieved. The plans will be such as to offer advantages which can only be obtained in a building specially constructed for laboratory purposes. Such special design and construction are essential for technical operations and are all the more necessary by reason of the increased duties and enlarged scope of laboratory work entailed by the provisions of the act of Congress approved July 1, 1902.

Under the provisions of this act three new divisions of laboratory research—viz, chemistry, zoology, and pharmacology—were provided for, and an advisory board was established for consultation with the Surgeon-General as to investigations to be inaugurated and methods of carrying out the same. The division of zoology has been organized, and its chief has already made valuable discoveries with regard to the hookworm disease (uncinariasis).

In view of the importance of the bubonic plague in its relations to the public health, studies of this disease were systematically carried on in the laboratory, and a large quantity of Haffkine's prophylactic for the prevention of the spread of the disease was prepared and distributed to the quarantine stations of the United States as well as to those in the Philippines and Hawaii. The laboratory also investigated from a bacteriological and pathological standpoint "an organism resembling bacillus pestis," the results of which will form the subject of a special report. Several specimens from cases of suspected plague were received from quarantine stations, examined, and reported upon. Investigations were also made upon an organism said to be pathogenic for rats and recommended for their extermination (*B. typhi murium*), and the results were published as a bulletin.

In view of the importance of trachoma and the number of cases coming into the United States, the laboratory is making a special investigation as to its nature, cause, and treatment.

Efforts were made to procure serums for the prevention and treatment of yellow fever, plague, typhoid fever, and pneumonia by appropriate immunizing treatments of horses. These experiments met with varying degrees of success, but the results arrived at do not as yet justify publication.

In order to carry into effect the act to regulate the sale of viruses, serums, etc., regulations have been prepared and work upon the diphtheria antitoxin and tetanus toxin is being carried on in the laboratory, in order that the laboratory shall be prepared to investigate said products for their potency and purity whenever such work may be required.

During the year special attention was paid to the subjects of disinfection and disinfectants. In view of the importance of the instrumentality of the mosquito in the transmission of malarial and yellow fevers, disinfection against these insects received special attention and a bulletin was published detailing the methods employed and the results obtained.

The instruction of officers in pathology and bacteriology has been systematically carried on, and seven officers were detailed to the laboratory during the year. A bulletin giving the laboratory course of instruction has been prepared and published. Tuberculosis and car sanitation have also been the subjects of investigation, and much time has been spent in the study of vaccinia and smallpox.

On account of the increased duties imposed upon the laboratory by the act of July 1, 1902, which enlarged its functions, an additional building will be required, estimates for which have been included in the regular Book of Estimates for the ensuing fiscal year, and a favorable recommendation to Congress thereon is requested.

SANITARY CONVENTION OF AMERICAN REPUBLICS.

Through the chairman of the United States delegation to the International Conference of American States which met in the City of Mexico in October, 1901, I recommended a plan for international agreement of the American republics for the sanitation of certain seacoast cities. This plan was printed both in English and Spanish in Public Health Reports of October 11, 1901, and was utilized by P. A. Surg. M. J. Rosenau on his detail to this conference. In December of 1901, in compliance with the request of the United States delegation for a sanitary expert to confer with them upon the subject of quarantine and sanitation, Dr. Rosenau was detailed and made known to the conference the views of this Bureau with regard to quarantine as set forth in several official reports and personal addresses by the Surgeon-General.

While the specific plan above referred to was not adopted, it had a decided influence, together with the other papers and the presentations of the subject made by Doctor Rosenau, in the formulation of the resolutions which were adopted. These resolutions are reported in full on page 59 et seq. They provide for a general international sanitary conference of the American republics, and under the authority of the Department of State a call has been issued by the governing board of the International Bureau of the American Republics for the first of these conventions, which is to be held in Washington December 2, 1902. Delegates on the part of the United States have been appointed, and, by request, a plan of organization and a tentative programme have been prepared by myself and communicated to the other republics.

SANITARY EXHIBITS AT BUFFALO AND CHARLESTON.

In connection with other departments and bureaus of the Government, the Marine-Hospital Service installed in the Government building at the Pan-American Exhibition, held at Buffalo, N. Y., May to November, 1901, an exhibit illustrating the operations of the Service in the conduct of its several professional and sanitary functions. The exhibit received commendation on account of its instructive character, and diplomas of honor were awarded. Subsequently the exhibit was moved to Charleston, S. C., as a part of the Carolina and West Indian Exposition.

LEGISLATION.

ACT INCREASING THE EFFICIENCY AND CHANGING THE NAME OF THE SERVICE.

The most important event in the history of the Service during the past year, if not in its entire history, was the act of Congress approved July 1, 1902, entitled "An act to increase the efficiency and change the name of the Marine-Hospital Service."

The necessity for some legislation increasing the efficiency of the Marine-Hospital Service as a public health service was urged in my last annual report, and the matter was referred by the Secretary of the Treasury in his annual report to Congress for favorable consideration.

The act changes the name of the Service to that of the Public Health and Marine-Hospital Service of the United States. It fixes by law the Marine-Hospital Service as the public health service and the office at Washington as the public health bureau; more than this, it establishes the Service on a firm foundation, making statutory provisions for many features of the Service which heretofore had only the authority of regulation. For example, the salaries of the commissioned medical corps are now fixed by law. It gives legal status to acting assistant surgeons, pharmacists, and employees, and enlarges the scope of the service in the manner described in its several sections.

Following is a copy of the act, as finally passed, and the report of the Committee on Interstate and Foreign Commerce of the House of Representatives, which contains in full the report of the Senate Committee on Public Health and National Quarantine:

AN ACT to increase the efficiency and change the name of the United States Marine-Hospital Service.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the United States Marine-Hospital Service shall hereafter be known and designated as the Public Health and Marine-Hospital Service of the United States, and the Supervising Surgeon-General and the officers now or hereafter commissioned under the act of January fourth, eighteen hundred and eighty-nine, entitled "An act to regulate appointments in the Marine-Hospital Service of the United States," and acts amendatory thereof, shall hereafter be known as the Surgeon-General, surgeons, passed assistant surgeons, and assistant surgeons of the Public Health and Marine-Hospital Service of the United States. Nothing in this act contained shall be held or construed to discharge any of the officers above named, or any of the acting assistant surgeons, pharmacists, and other employees of the Marine-Hospital Service, or to deprive any officer of his commession or the benefits derived by longevity of service. The care of sick and disabled seamen and all other duties now required by law to be performed by the Marine-Hospital Service shall hereafter be performed by the Public Health and Marine-Hospital Service, and all funds and appropriations now provided by law for use by the Marine-Hospital Service and all properties and rights pertaining to said Service shall be available for use for like purposes and in like manner, under the Treasury Department, by the Public Health and Marine-Hospital Service.

SEC. 2. That the salary of the Surgeon-General of the Public Health and Marine-Hospital Service shall be five thousand dollars per annum, and the salaries and allowances of the commissioned medical officers of said Service shall be the same as now provided by regulations of the Marine-Hospital Service.

SEC. 3. That commissioned medical officers, when detailed by the Surgeon-General for duty in the Public Health and Marine-Hospital Bureau at Washington, District of Columbia, in charge of the administrative divisions thereof, namely, marine hospitals and relief, domestic quarantine, foreign and insular quarantine, personnel and accounts, sanitary reports and statistics, and scientific research, shall, while thus serving, be assistant surgeons-general of the Public Health and Marine-Hospital Service, but their pay and allowances shall be the same as now provided by regulations of the Marine-Hospital Service for officers in charge of said divisions; and the senior officer thus serving shall be the assistant within the meaning of section one hundred and seventy-eight, Revised Statutes of the United States: *Provided, however,* That no such officer shall be detailed in charge of said divisions who is below the rank of passed assistant surgeon.

SEC. 4. That the President is authorized, in his discretion, to utilize the Public Health and Marine-Hospital Service in times of threatened or actual war to such extent and in such manner as shall, in his judgment, promote the public interest without, however, in any wise impairing the efficiency of the Service for the purposes for which the same was created and is maintained.

SEC. 5. That there shall be an advisory board for the hygienic laboratory provided by the act of Congress approved March third, nineteen hundred and one, for consultation with the Surgeon-General of the Public Health and Marine-Hospital Service relative to the investigations to be inaugurated, and the methods of conducting the same, in said laboratory. Said board shall consist of three competent experts, to be detailed from the Army, the Navy, and the Bureau of Animal Industry, by the Surgeon-General of the Army, the Surgeon-General of the Navy, and the Secretary of Agriculture, respectively, which experts, with the director of the said laboratory, shall be ex officio members of the board, and serve without additional compensation. Five other members of said board shall be appointed by the Surgeon-General of Public Health and Marine-Hospital Service, with the approval of the Secretary of the Treasury, who shall be skilled in laboratory work in its relation to the public health and not in the regular employment of the Government. The said five members shall each receive compensation of ten dollars per diem while serving in conference, as aforesaid, together with allowance for actual and necessary traveling expenses and hotel expenses while in conference. Said conference is not to exceed ten days in any one fiscal year. The term of service of the five members of said board not in the regular employment of the Government first appointed shall be so arranged that one of said members shall retire each year, the subsequent appointments to be for a period of five years. Appointments to fill vacancies occurring in a manner other than as above provided shall be made for the unexpired term of the member whose place has become vacant.

SEC. 6. That there shall be appointed by the Surgeon-General, with the approval of the Secretary of the Treasury, whenever, in the opinion of the Surgeon-General, commissioned medical officers of the Public Health and Marine-Hospital Service are not available for this duty by detail, competent persons to take charge of the divisions, respectively, of chemistry, zoology, and pharmacology of the hygienic laboratory, who shall each receive such pay as shall be fixed by the Surgeon-General with the approval of the Secretary of the Treasury. The director of the said laboratory shall be an officer detailed from the corps of commissioned medical officers of the Public Health and Marine-Hospital Service, as now provided by regulations for said detail from the Marine-Hospital Service, and while thus serving shall have the pay and emoluments of a surgeon: *Provided,* That all commissioned officers of the Public Health and Marine-Hospital Service not below the grade of passed assistant surgeon shall be eligible to assignment to duty in charge of the said divisions of the hygienic laboratory, and while serving in such capacity shall be entitled to the pay and emoluments of their rank.

SEC. 7. That when, in the opinion of the Surgeon-General of the Public Health and Marine-Hospital Service of the United States, the interests of the public health would be promoted by a conference of said Service with State or Territorial boards of health, quarantine authorities, or State health officers, the District of Columbia included, he may invite as many of said health and quarantine authorities as he deems necessary or proper to send delegates, not more than one from each State or Territory and District of Columbia, to said conference: *Provided,* That an annual conference of the health authorities of all the States and Territories and the District of Columbia shall be called, each of said States, Territories, and the District of

Columbia to be entitled to one delegate: *And provided further*, That it shall be the duty of the said Surgeon-General to call a conference upon the application of not less than five State or Territorial boards of health, quarantine authorities, or State health officers, each of said States and Territories joining in such request to be represented by one delegate.

SEC. 8. That to secure uniformity in the registration of mortality, morbidity, and vital statistics it shall be the duty of the Surgeon-General of the Public Health and Marine-Hospital Service, after the annual conference required by section seven to be called, to prepare and distribute suitable and necessary forms for the collection and compilation of such statistics, and said statistics, when transmitted to the Public Health and Marine-Hospital Bureau on said forms, shall be compiled and published by the Public Health and Marine-Hospital Service as a part of the health reports published by said service.

SEC. 9. That the President shall from time to time prescribe rules for the conduct of the Public Health and Marine-Hospital Service. He shall also prescribe regulations respecting its internal administration and discipline and the uniforms of its officers and employees. It shall be the duty of the Surgeon-General to transmit annually to the Secretary of the Treasury, for transmission by said Secretary to Congress, a full and complete report of the transactions of said service, including a detailed statement of receipts and disbursements.

Approved, July 1, 1902.

[House Report No. 2415, Fifty-seventh Congress, first session.]

[June 7, 1902.—Committed to the Committee of the Whole House on the state of the Union and ordered to be printed.]

Mr. Fletcher, from the Committee on Interstate and Foreign Commerce, submitted the following report (to accompany S. 2162):

The Committee on Interstate and Foreign Commerce, to whom was referred the bill (S. 2162) to increase the efficiency and change the name of the United States Marine-Hospital Service, having considered the same, report thereon with a recommendation that it pass.

The bill has the approval of the Treasury Department, as will appear by the letters attached and which are made a part of this report.

There has been a great demand for many years for the enactment of legislation of this character. The necessity of such legislation has been seriously felt by those intrusted with the enforcement of quarantine regulations and the advancement of the sanitary welfare of the country. The difficulty of obtaining legislation heretofore has been the inability to secure a concurrence of the Federal and State authorities upon the passage of any special bill. This difficulty has been eliminated by the aforesaid Senate bill, upon which representative Federal authorities, State authorities, as well as representative men of the medical profession of the United States, have united in approval and have given formal expression of their desire for its passage.

The committee consider it fortunate that these important influences are in harmony, and are satisfied that in consequence the bill, if enacted into law, will be the more effective and beneficial. The measure has been prepared with care to prevent any conflict between Federal and State authorities, and it is believed that its passage will result in the most cordial cooperation between said authorities.

The administrative features of the bill are demanded by the growth of the Marine-Hospital Service and increase in its functions which have been imposed upon it by acts of Congress.

Other reasons for the passage of the bill and an exposition of its contents are clearly and forcibly stated by Senator Spooner, of Wisconsin, in the report which he submitted to the Senate upon this bill. The report of Senator Spooner is herewith appended and made a part of this report.

The approval of the Treasury Department of this measure is set forth in a letter from the Secretary of the Treasury, Hon. Lyman J. Gage, addressed to the chairman of the Committee on Interstate and Foreign Commerce of the House of Representatives, under date of January 16, 1902, and in a letter to the chairman of the Committee on Public Health and National Quarantine of the Senate, February 3, 1902, from the Surgeon-General of the Marine-Hospital Service, approved by Hon. L. M. Shaw, Secretary of the Treasury. These letters relate to House bill 7189 and Senate bill 2162, which are identical.

The committee therefore recommends the adoption, without amendment, of S. 2162 as it passed the Senate.

[Senate Report No. 1531, Fifty-seventh Congress, first session.]

The Committee on Public Health and National Quarantine, to whom was referred the following bills: (a) S. 2162, "A bill to increase the efficiency and change the name of the United States Marine-Hospital Service;" (b) S. 2417, "A bill relating to quarantine and the public health;" (c) S. 4583, "A bill to reorganize and increase the efficiency of the Marine-Hospital Service, and for other purposes;" (d) S. 4895, "A bill to establish a commission of public health and fix the salaries of the commissioned officers of the Marine-Hospital Service," have given careful consideration to the said bills and to the general subject of the national health, quarantine, and to improvements in the organization of the United States Marine-Hospital Service.

The committee report back Senate bill 2162, by substitute, with the recommendation that it do pass. This substitute changes the name of the United States Marine-Hospital Service to "Public Health and Marine-Hospital Service of the United States." This change in the name is justified by the growth of the Service, the enlargement from time to time of its original functions, and the provisions hereinafter referred to intended to bring it into closer relations and cooperation with the health authorities of the States, in conservation generally of the public health. The substitute eliminates the word "Supervising" from the official designation of the Surgeon-General as too cumbersome.

The salary of the Surgeon-General, which is now $4,000, is increased to $5,000 per annum, an increase which the added responsibility and duties of the Service fully justify, in the opinion of your committee.

The substitute, also following in that respect, with an amendment, the original bill, authorizes the Surgeon-General to detail commissioned medical officers of the Service for duty in the Bureau at Washington, in charge of certain administrative divisions, namely, marine hospitals and relief, domestic quarantine, foreign and insular quarantine, personnel and accounts, sanitary reports and statistics, and scientific research, and gives the rank while thus serving of assistant supervising surgeons-general of the Public Health and Marine-Hospital Service. It also provides that the senior officer thus serving shall be the assistant surgeon-general, within the meaning of section 178, Revised Statutes of the United States. The committee has added a proviso, upon what seemed to be the reasonable request of the officers of the Service, that no officer below the grade of a passed assistant surgeon shall be eligible to this detail.

Section 4 of the bill, which provides rank in time of war or threatened war corresponding with the rank of surgeons, etc., in the Army and Navy, the committee have eliminated. The officials of the service are uniformed and have been for many years, and have been under a quasi-military discipline, with commendable efficiency. The Service is one essentially civil, and the committee have not thought it wise to put it upon a military or naval basis or to provide in a detailed way for rank and precedence in the event of war, threatened or actual.

By act of Congress approved March 3, 1901, a hygienic laboratory was provided for in the Marine-Hospital Service. The committee has adopted, with some modification, as in the interest of public health, the provision of section 5 of the original bill for an advisory board for this laboratory to confer with the Surgeon-General. The original section constituted the board of the Surgeon-General of the Army, the Surgeon-General of the Navy, the Chief of the Bureau of Animal Industry of the Department of Agriculture, and the director of the laboratory, all being ex officio, and provided for five other members, to be appointed by the Secretary of the Treasury, to receive compensation. As the board is to render a service scientific and technical, the committee did not think it wise that it should be constituted as provided by the bill. They provided in the substitute, therefore, that the ex officio members of the board, aside from the director of the laboratory, consist of three competent experts, to be detailed from the Army, the Navy, and the Bureau of Animal Industry by the Surgeon-General of the Army, the Surgeon-General of the Navy, and the Secretary of Agriculture, respectively.

Section 6 of the bill provides for the appointment and commission by the President of one chemist, one medical zoologist, and one pharmacologist, each to have the pay and emoluments of a surgeon of the United States Public Health and Marine-Hospital Service. There was some objection to this by the officers of the Marine-Hospital Service, and the committee, after hearings and full consideration, concluded that it would be wise to authorize the employment of these specialists outside of the Service, and without regard to rank therein, where officers of the Service were not available, and with such compensation as should be fixed by the Surgeon-General, with the approval of the Secretary of the Treasury. The committee deem it important that the most competent men in the specialties named should be employed, in order to obtain the best results, and that therefore in the beginning, at least, and during the upbuilding of the work, there should be freedom to attract by adequate compensation those best fitted. While wastefulness, of course, could not be justified in any public expenditure, in promoting the public health any sacrifice of substantial results for the mere matter of expenditure would be obviously false economy and not to be defended upon any just principle.

Section 7 of the bill was an attempt to meet the long-continued demand from the State health authorities, and especially from the South, and in some of the great cities on tide water, for legislation which would secure consultation, and therefore cooperation, between the health authorities of States and the quarantine officials of the United States. It was not, in the opinion of the committee, so drawn as to accomplish this result so much to be desired, and they therefore in the substitute have supplied a new section 7, which is as follows:

"That when, in the opinion of the Surgeon-General of the Public Health and Marine-Hospital Service of the United States, the interests of the public health would be promoted by a conference of said Service with State or Territorial boards of health, quarantine authorities, or State health officers, the District of Columbia included, he may invite as many of said health and quarantine authorities as he deems necessary or proper to send delegates, not more than one from each State or Territory and District of Columbia, to said conference: *Provided*, That an annual conference of the health authorities of all the States and Territories and District of Columbia shall be called, each of said States, Territories, and the District of Columbia to be entitled to one delegate: *And provided further*, That it shall be the duty of the said Surgeon-General to call a conference upon the application of not less than five States or Territorial boards of health, quarantine authorities, or State health officers, each of said boards or quarantine authorities joining in such request to be represented by one delegate."

This section we regard as by all means the most important section in the bill. The dividing line between the Federal power of quarantine, in its relation to foreign commerce and interstate commerce, and the State power of quarantine and police regulation, in its relation to the public health, is undoubtedly real, but it is often very difficult of discernment; and therefore it has often happened that State authorities have felt their province invaded by Federal authorities, and Federal authorities have insisted that the national function was invaded by State authorities; and out of it all has grown more or less of friction, necessarily detrimental to great public interests. No statute, of course, can change the power of the Federal authorities, as defined by the Constitution, or take away the sovereign power of any State in respect to these matters. The committee has been impressed with the conviction that in the general public interest some recognition by Federal legislation of the State health authorities, in the way of consultation upon subjects of vital consequence to the localities, and as to the rules to be put in operation by both State and Federal authorities in accomplishing the same end, would of necessity bring about better understanding and a cooperation which would inevitably promote a fuller accomplishment of the great purpose desired by both the Federal and State authorities.

The Federal jurisdiction is exercised primarily in the interest of commerce. The local or State jurisdiction is exercised primarily for the protection of life and health in the communities and, secondarily, in the interest of commerce. In the hope and belief that good results will come from it the committee has inserted section 7, above set forth, which, briefly stated, provides:

First. That when, in the opinion of the Surgeon-General, the interests of the public health would be promoted by a conference of that Service with the State or Territorial health officers, he may invite as many of said health officers and quarantine authorities as he deems necessary to send delegates, not more than one from each State or Territory and District of Columbia, to such a conference.

Second. That an annual conference of the health authorities of the States and Territories and District of Columbia shall be called by the Surgeon-General, each State, Territory, and the District of Columbia to be entitled to one delegate.

Third. That it shall be the duty of the Surgeon-General to call a conference upon the application of not less than five State or Territorial boards of health, quarantine authorities, or State health officers, each of said boards or quarantine authorities joining in such request to be represented by one delegate.

It is not provided that the expenses of the delegates to these conferences shall be borne by the United States. It is not intended that they shall be junkets, but that they shall be attended by those who have at heart the health interests of their people and shall represent people who are willing to bear the expense of such service.

Section 9 of the original bill is amended so as to require the Supervising Surgeon-General to make report to the Secretary of the Treasury, to be transmitted by that official to Congress, and to require that the report shall include a detailed statement of receipts and disbursements in the service.

The committee recommend the adoption of the substitute, and report back S. 2417, S. 4583, and S. 4895 with the recommendation that they be severally indefinitely postponed.

TREASURY DEPARTMENT,
Washington, D. C., January 16, 1902.

SIR: I am in receipt of a communication from your committee of January 13, inclosing a copy of House bill No. 7189, and requesting me to furnish the committee with such suggestions as I may deem proper touching the merits of the bill and the propriety of its passage.

In reply I beg leave to invite your attention to my annual report to Congress, dated December 2, 1901, on page 53 of which I concurred in the recommendation of the Surgeon-General for appropriate legislation by Congress to increase the efficiency of the Marine-Hospital Service as a public health service. The method of thus increasing its efficiency as detailed in the provisions of this bill meets with my approval.

The bill is calculated to strengthen a branch of the Government service which has, particularly in the last decade, undergone a steady and natural growth, and is recognized in various acts of Congress and by reason of its efficiency as useful and necessary in the protection of the public health.

If enacted into law it would give an improved status to this Service, expanding it in a manner to meet the growing necessities of the Government and the people, and aiding materially in the administration of its functions as now provided by law.

Inclosed are comments, explaining in detail the several sections of the bill.

I have to suggest that in section 1, on page 2, line 6, after the word "commission," the following words be inserted: "or the benefits derived by longevity of service," to remove any doubts as to the intent of the bill with regard to longevity of service.

I have also to suggest that in section 5, page 4, line 15, the words "in conference" be inserted after the word "serving," to make it more clear that the compensation referred to is to be received only during the time of actual service.

I have further to recommend that in section 7, page 5, there be inserted in the nineteenth line, after the words "health or health," the words "or quarantine," and in the twenty-third line, after the word "one," there be inserted the words "health and one quarantine authority." This is to permit the inviting of quarantine authorities in conference, said authorities, in some instances, being independent and distinct from State health boards.

These additions have been inserted in the inclosed copy of the bill.

With the above suggestions I have to state that it is desirable that the bill should be enacted into law.

Respectfully,

L. J. GAGE, *Secretary.*

Hon. WILLIAM P. HEPBURN,
Chairman Committee on Interstate and Foreign Commerce,
House of Representatives.

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL MARINE-HOSPITAL SERVICE,
Washington, February 3, 1902.

SIR: I have the honor to acknowledge receipt of your letter of January 22d, inclosing a copy of the bill introduced by Senator Perkins (S. 2162), and also a copy of a proposed amendment thereto, and requesting my opinion on the bill and the amendment.

I will make the proposed amendment the subject of a separate letter.

In general it may be said that this measure is made necessary by the growth of the Marine-Hospital Service both in functions and personnel. This growth is due to the new duties relating to the public health, which have, from time to time, been imposed upon the Service by Congress. It may be termed an administrative measure, in compliance with the last report of the Secretary of the Treasury, well calculated to enable the Marine-Hospital Service to carry on with greater facility and efficiency its varied and important work

I inclose herewith (inclosure No. 1) a copy of a letter of the Secretary of the Treasury to the chairman of the Committee on Interstate and Foreign Commerce of the House of Representatives, in response to the latter's request, expressing his approval of the bill and his opinion that it is desirable that it should be enacted into law, the House bill (H. R. 7189) being the same as that introduced into the Senate by Mr. Perkins (S. 2162).

Three years ago, by reason of the war with Spain and the unusual duties thrown upon the Service in consequence thereof, it became necessary to increase the corps of officers of the Service and to reorganize the Bureau on a much broader plan than the one then existing. Accordingly, six distinct divisions of the Bureau were made, with an experienced surgeon in charge of each, and later, by the last Congress, the duties of the Service were still further increased by the addition of a hygienic laboratory "for the investigation of infectious and contagious diseases and matters pertaining to the public health."

The new organization and the new functions already alluded to make appropriate and natural further provisions for the efficient conduct of the Service as set forth in this bill.

I have made a careful study of the several bills which have been introduced from time to time in the last ten years affecting the general question of public health and the Marine-Hospital Service, and believe that the bill introduced by Mr. Perkins (S. 2162) both meets the present requirements so far as legislation may be successfully proposed and places in a more effective position an organization which has grown to its present standard of strength and efficiency through years of hard experience.

A few verbal alterations, however, are recommended, as follows:

In section 1, on page 2, of the bill, line 1, erase the words "hospital stewards" and insert in place thereof the word "pharmacists." This change is made to conform with a recent regulation of the Service changing the title of hospital stewards to pharmacists.

In section 1, on page 2, line 6, after the word "commission," insert the following words: "or the benefits derived by longevity of service." This is to remove any doubt as to the intent of the bill with regard to said longevity.

In section 5, page 4, line 15, after the word "serving," insert the words "in conference." This is to make it more clear that the compensation referred to is to be received only during the time of actual service.

In section 7, page 5, line 19, after the words "health or health," insert the words "or quarantine," and in line 23 of the same page and section, after the word "one," insert the words "health and one quarantine authority." The insertions in this section are to permit the inviting of quarantine authorities in conference, said authorities in some instances being independent of State health boards or authorities.

I inclose a copy of the bill with the above alterations inserted, together with a series of comments on its several sections, to which I invite your attention.

I would urgently urge, in the interest of the public health, that this bill be enacted into law.

Respectfully,

WALTER WYMAN,
Surgeon-General Marine-Hospital Service.

Hon. GEORGE VEST,
Chairman Committee on Public Health and National Quarantine,
United States Senate.

Approved February 4, 1902.

L. M. SHAW, *Secretary.*

ACT TO REGULATE THE SALE OF VIRUSES, SERUMS, TOXINS, ETC

Another important act of Congress affecting the Service was the act approved July 1, 1902, regulating the sale of viruses, etc., copy of same being subjoined.

The Bureau had been considering for some time the preparation of a bill of this kind and had gathered considerable information necessary for its preparation. The Medical Society of the District of Columbia had also taken up the matter and their representatives consulted the Bureau for advice and information, which was freely given. The bill, as introduced and passed after amendment, was not, however, submitted to the Treasury Department nor to the Marine-Hospital Bureau for report. It met, however, the indorsement of the Medical Society of the District of Columbia, and was reported back to the Senate and to the House by the respective committees on the District of Columbia. The action required on this bill is that a board consisting of the Surgeon-General of the Army, Surgeon-General of the Navy, and the Surgeon-General of the Public Health and Marine-Hospital Service shall prepare regulations under which licenses may be given to the manufacturers of viruses, serums, toxins, and analogous products, the said licenses to be given by the Secretary of the Treasury, and the enforcement of the act in all its provisions being also placed upon the Secretary of the Treasury.

Following is a copy of the act as it passed:

[Public—No. 244.]

AN ACT to regulate the sale of viruses, serums, toxins, and analogous products in the District of Columbia, to regulate interstate traffic in said articles, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That from and after six months after the promulgation of the regulations authorized by section four of this act no person shall sell, barter, or exchange, or offer for sale, barter, or exchange in the District of Columbia, or send, carry, or bring for sale, barter, or exchange from any State, Territory, or the District of Columbia into any State, Territory, or the District of Columbia, or from any foreign country into the United States, or from the United States into any foreign country, any virus, therapeutic serum, toxin, antitoxin, or analogous product applicable to the prevention and cure of diseases of man, unless (a) such virus, serum, toxin, antitoxin, or product has been propagated and prepared at an establishment holding an unsuspended and unrevoked license, issued by the Secretary of the Treasury as hereinafter authorized, to propagate and prepare such virus, serum, toxin, antitoxin, or product for sale in the District of Columbia, or for sending, bringing, or carrying from place to place aforesaid; nor (b) unless each package of such virus, serum, toxin, antitoxin, or product is plainly marked with the proper name of the article contained therein, the name, address, and license number of the manufacturer, and the date beyond which the contents can not be expected beyond reasonable doubt to yield their specific results: *Provided,* That the suspension or revocation of any license shall not prevent the sale, barter, or exchange of any virus, serum, toxin, antitoxin, or product aforesaid which has been sold and delivered by the licentiate prior to such suspension or revocation, unless the owner or custodian of such virus, serum, toxin, antitoxin, or product aforesaid has been notified by the Secretary of the Treasury not to sell, barter, or exchange the same.

SEC. 2. That no person shall falsely label or mark any package or container of any virus, serum, toxin, antitoxin, or product aforesaid; nor alter any label or mark on any package or container of any virus, serum, toxin, antitoxin, or product aforesaid so as to falsify such label or mark.

SEC. 3. That any officer, agent, or employee of the Treasury Department, duly detailed by the Secretary of the Treasury for that purpose, may during all reasonable hours enter and inspect any establishment for the propagation and preparation of any virus, serum, toxin, antitoxin, or product aforesaid for sale, barter, or exchange in the District of Columbia, or to be sent, carried, or brought from any State, Territory, or the District of Columbia into any other State or Territory or the District of Columbia, or from the United States into any foreign country, or from any foreign country into the United States.

SEC. 4. That the Surgeon-General of the Army, the Surgeon-General of the Navy, and the Supervising Surgeon-General of the Marine-Hospital Service be, and they are hereby, constituted a board with authority, subject to the approval of the Secretary of the Treasury, to promulgate from time to time such rules as may be necessary in the judgment of said board to govern the issue, suspension, and revocation of licenses for the maintenance of establishments for the propagation and preparation of viruses, serums, toxins, antitoxins, and analogous products, applicable to the prevention and cure of diseases of man, intended for sale in the District of Columbia, or to be sent, carried, or brought for sale from any State, Territory, or the District of Columbia, into any other State, Territory, or the District of Columbia, or from the United States into any foreign country, or from any foreign country into the United States: *Provided,* That all licenses issued for the maintenance of establishments for the propagation and preparation in any foreign country of any virus, serum, toxin, antitoxin, or product aforesaid, for sale, barter, or exchange in the United States, shall be issued upon condition that the licentiates will permit the inspection of the establishments where said articles are propagated and prepared, in accordance with section three of this act.

SEC. 5. That the Secretary of the Treasury be, and he is hereby, authorized and directed to enforce the provisions of this act and of such rules and regulations as may be made by authority thereof; to issue, suspehd, and revoke licenses for the maintenance of establishments aforesaid, and to detail for the discharge of such duties such officers, agents, and employees of the Treasury Department as may in his judgment be necessary.

SEC. 6. That no person shall interfere with any officer, agent, or employee of the Treasury Department in the performance of any duty imposed upon him by this act or by regulations made by authority thereof.

SEC. 7. That any person who shall violate, or aid or abet in violating, any of the provisions of this act shall be punished by a fine not exceeding five hundred dollars or by imprisonment not exceeding one year, or by both such fine and imprisonment, in the discretion of the court.

SEC. 8. That all acts and parts of acts inconsistent with the provisions of this act be, and the same are hereby, repealed.

Approved July 1, 1902.

CONCLUSION.

The foregoing is a review in brief of the operations of the Service during the last year. Following are the reports, in greater detail, of the operations as conducted through each of the six divisions of the Bureau, these divisions having been provided for in the law and each medical officer detailed in charge of a division being designated an assistant surgeon-general.

The reports of the division officers are not only valuable for reference, but contain information narrated in a manner to excite interest. With the new name, the new duties, and increase of facilities provided by the act of July 1, 1902, the Service enters upon a new and advanced stage of its existence. The possibilities of its usefulness under the act can scarcely be realized at the present time. There is little doubt that more may be developed out of the law in coordinating the labors of the national and State health authorities and in evolving and prosecuting practical measures for improving the sanitary condition of the United States than can be appreciated by a cursory examination of the act. There has been provided by Congress during the past year a foundation, broad and strong, the essential element of which is a service more than one hundred years old, upon which may be built a sanitary structure worthy of this nation. Indications at the present time point to the growing importance of sanitation and hygiene as factors in all governments. The Treasury Department and this Service have now abundant opportunity to wield an influence for the public welfare far beyond any opportunity of a like character that has been presented in the history of the country.

I have the honor to remain, respectfully,

WALTER WYMAN,
Surgeon-General.

DIVISION OF PERSONNEL AND ACCOUNTS.

REPORT OF THE DIVISION OF PERSONNEL AND ACCOUNTS.

By George Purviance,

Assistant Surgeon-General, U. S. Public Health and Marine-Hospital Service, in charge.

PERSONNEL.

COMMISSIONED MEDICAL CORPS.

At the beginning of the fiscal year (July 1, 1901) the commissioned corps, including the Surgeon-General, consisted of 106 commissioned officers, as follows: Twenty-nine surgeons, 23 passed assistant surgeons, and 53 assistant surgeons. One surgeon resigned to take effect April 19, 1902; one passed assistant surgeon was promoted to the grade of surgeon, and five assistant surgeons were promoted to the grade of passed assistant surgeon.

The corps consists at the close of the fiscal year (June 30, 1902) of 105 commissioned officers, as follows:

Surgeon-General	1
Surgeons	29
Passed assistant surgeons	27
Assistant surgeons	48
Total	105

BOARDS CONVENED.

One board was convened to meet at Washington, D. C., March 17, 1902, for the purpose of examining four assistant surgeons to determine their fitness for promotion to the grade of passed assistant surgeon. All of them passed successful examinations.

One board was convened to meet at San Francisco, Cal., March 24, 1902, for the purpose of examining an assistant surgeon to determine his fitness for promotion to the grade of passed assistant surgeon. He passed a successful examination.

One board, to meet in Washington, D. C., June 16, 1902, was convened for the examination of such applicants as should present themselves for admission to the medical corps as assistant surgeons in the Public Health and Marine-Hospital Service.

One board was convened for examination of applicants for position in the United States Coast and Geodetic Survey.

One board was convened to make a medical survey of an officer of the United States Coast and Geodetic Survey.

One board was convened for the purpose of selecting a site for a quarantine station at Brunswick, Ga.

Twenty-two boards were convened for the purpose of making physical examinations of officers and applicants for the Revenue-Cutter Service.

NONCOMMISSIONED OFFICERS.

ACTING ASSISTANT SURGEONS.

There were on duty at the beginning of the fiscal year 188 acting assistant surgeons. During the year 84 were appointed, which number includes 8 physicians who were in charge of the Florida State quarantine stations at the time said stations were transferred to this service. One acting assistant surgeon died; 21 resigned; 22 were transferred to the Republic of Cuba on May 19, 1902; 46 were separated from the service by limitation of appointment, and 1 was relieved by reason of discontinuance of station, leaving 181 on duty at the close of the fiscal year.

Seven temporary acting assistant surgeons were appointed April 1, 1902, for duty in the offices of the United States consuls at various fruit ports in Central and South America.

SANITARY INSPECTORS.

There were 2 sanitary inspectors on duty at the beginning of the fiscal year and 3 were appointed. The designation of 1 was changed to that of acting assistant surgeon, 1 resigned, and the services of 1 were discontinued, leaving 2 on duty at the close of the year.

MEDICAL INSPECTORS.

There was on duty at the beginning of the fiscal year 1 medical inspector and 1 was appointed during the year, leaving 2 on duty at the close of the year.

INTERNES.

There were on duty at the beginning of the fiscal year 17 internes, 12 were appointed and 11 resigned, leaving at the close of the year 18 on duty.

PHARMACISTS.

There were on duty at the beginning of the fiscal year 48 pharmacists, divided as follows:

Senior pharmacists and chemists	2
Senior pharmacist and assistant chemist	1
Senior pharmacist, chemist, and special disbursing agent	1
Senior pharmacists	27
Junior pharmacists	17

Two eligibles were certified by the Civil Service Commission and appointed junior pharmacists.

One senior pharmacist and chemist was appointed clerk in the Bureau, 1 senior pharmacist resigned, 1 senior pharmacist was transferred to the Immigration Service, 1 junior pharmacist resigned, 1 junior pharmacist was appointed clerk in the Bureau, leaving the total number of the three grades at the close of the fiscal year 45.

HOSPITAL AND QUARANTINE ATTENDANTS.

There were at the beginning of the fiscal year 646 attendants. Nine hundred and three were appointed during the year, and 919 have been separated from the service by reason of resignation, death, desertion, and removal for cause, leaving the total number on duty at the close of the year as follows:

Branch of Service in which employed.	In Service July 1, 1901.	Appointed during year.	Separated from Service.	In Service June 30, 1902.
Marine-Hospital Service	444	523	596	371
Quarantine	166	228	174	220
Epidemic	36	152	149	39
Philippine Islands	38	107	81	64

The quarantine table includes 19 attendants employed in Honolulu and 19 in Porto Rico. The epidemic table also includes 17 attendants employed on the disinfecting barge *Sanator*, at Habana, Cuba.

In the previous report the attendants employed in Hawaii, Porto Rico, and Cuba were given under a separate table, while the attendants employed at the close of the fiscal year in Hawaii and Porto Rico are included in the regular quarantine attendants, their salaries being paid from the quarantine appropriation for this fiscal year. The attendants employed in Cuba were transferred to the Republic of Cuba on May 19, 1902, except the 17 above referred to as being employed on the *Sanator*.

SPECIAL DETAILS OF COMMISSIONED MEDICAL OFFICERS.

IN FOREIGN PORTS.

Surg. A. H. Glennan was assigned to duty in the office of the United States consul-general at Habana, Cuba, May 20, 1902.

Surg. J. J. Kinyoun was, on July 2, 1901, directed to proceed to Yokohama, Japan, and Hongkong, China, as inspector.

P. A. Surg. A. R. Thomas was, on November 19, 1901, relieved from duty at Liverpool, England, and assigned to duty in the office of the United States consul-general at Glasgow, Scotland. On January 23, 1902, he was directed to proceed to Liverpool, England, for special temporary duty. On January 30, 1902, he was directed to proceed to London, England, for special temporary duty. On February 7, 1902, he was directed to proceed to Liverpool, England, for special temporary duty. On February 21, 1902, he was relieved from duty at Glasgow, Scotland, and assigned to duty in the office of the consul-general at London. On April 25, 1902, he was relieved from duty in the office of the United States consul-general at London and assigned to duty in Manila, P. I.

Asst. Surg. H. B. Parker was, on April 25, 1902, appointed chairman of a board of medical officers for the investigation of yellow fever, malaria, and dengue at Vera Cruz, Mexico.

Asst. Surg. R. H. von Ezdorf was, on May 20, 1902, assigned in the division of the United States consul-general at Habana, Cuba, for duty at Matanzas, Cuba.

Asst. Surg. J. F. Anderson was, on November 19, 1901, assigned to duty in the office of the United States consul at Liverpool, England, and on December 13, 1901, he was relieved from said duty and directed to return to the United States.

Asst. Surg. V. G. Heiser was, on April 28, 1902, assigned to duty in the office of the United States Commissioner of Immigration at Quebec, Canada.

Asst. Surg. Dunlop Moore was, on March 6, 1902, relieved from duty at Honolulu, Hawaii, and assigned to duty in the office of the United States consul-general at Yokohama, Japan.

Asst. Surg. Carroll Fox was, on November 19, 1901, directed to proceed to Liverpool, England, and report to Asst. Surg. J. F. Anderson for duty, and on December 19, 1901, he was assigned to duty in the office of the United States consul at Liverpool, relieving Assistant Surgeon Anderson.

Asst. Surg. Joseph Goldberger was, on April 18, 1902, assigned to duty in the office of the United States consul at Tampico, Mexico.

Asst. Surg. F. E. Trotter was, on May 21, 1902, assigned to duty in the office of the United States consul-general at Habana, Cuba.

IN THE UNITED STATES.

Surg. Eugene Wasdin was, on September 13, 1901, relieved temporarily from command of the service at Buffalo, N. Y., and assigned to special duty with President McKinley.

Surg. J. O. Cobb was, on June 23, 1902, directed to proceed to Missouli, Mont., and make an investigation relative to reported outbreak of so-called spotted fever and report the result by wire after a careful investigation.

P. A. Surg. W. G. Stimpson was, on April 23, 1902, directed to proceed to Mendocino and Napa, Cal., and make an inspection of the food and quarters furnished patients of this Service in the Mendocino State Hospital and Napa State Hospital, noting the general method of caring for those patients, and making recommendation as to their retention in the said institutions.

P. A. Surg. Rupert Blue was, on May 29, 1902, directed to proceed to Sheboygan, Wis., and report the necessity for the establishment of a relief station at that port. His report was favorable, and he submitted the nomination of Dr. J. C. Elfers, who was subsequently appointed acting assistant surgeon for duty at that port.

P. A. Surg. J. B. Greene was, on December 18, 1901, directed to proceed to Rouse Point, Plattsburg, and Malone, N. Y., and confer with the collectors of customs at each of the ports mentioned relative to inspection of immigrants from New Brunswick, and wire the Bureau his recommendations in the premises.

P. A. Surg. Hill Hastings was, on June 3, 1902, directed to proceed to Cananea, Northeast Sonora, Mexico, via Benson, Ariz., to investigate and report as to whether the rumors of numerous deaths from typhus fever in mining camps at the places above named were true, and make a report to the Bureau by wire whether the establishment of a border quarantine was necessary.

Asst. Surg. M. J. White was, on April 15, 1902, directed to proceed to Reno, Nev., and make an investigation relative to a reported case of bubonic plague.

Asst. Surg. B. J. Lloyd was, on May 3, directed to proceed to Nome, Alaska, for special temporary duty at that port during the open quarantine season.

TO ASSIST IN SUPPRESSION OF SMALLPOX.

Surg. W. P. McIntosh was, on November 21, 1901, directed to proceed to Ellijay, Ga., to confer and advise with authorities relative to smallpox situation in that vicinity.

Surg. W. P. McIntosh was, on December 11, 1901, upon the request of the secretary of the State board of health, directed to proceed to Athens and Ducktown, Tenn., and confer with health authorities relative to smallpox situation.

Surg. T. B. Perry was, on July 21, 1901, directed to proceed to Martinsburg, W. Va., and confer with Doctor Myers, president of the State board of health, as to smallpox situation in that vicinity.

P. A. Surg. C. P. Wertenbaker was, on March 19, 1902, directed to proceed to Lincoln, Nebr., to consult with secretary of State board of health regarding measures for suppression of smallpox in the State of Nebraska.

P. A. Surg. Rupert Blue was, on February 10, 1902, directed to proceed to Des Moines, Iowa, to confer with postmaster and Doctor Kennedy and report as to necessity for fumigating mail at that place, in view of the fact that a report had been made to the effect that there were about 400 cases of smallpox in said vicinity.

P. A. Surg. E. K. Sprague was, on February 17, 1902, directed to proceed to Port Huron, Mich., to confer with the collector of customs and acting assistant surgeon as to necessity of vaccinating ferryboat passengers from Sarnia, and make report.

Asst. Surg. H. B. Parker was, on September 23, 1901, directed to proceed to Jacksonville, Fla., to consult with State Health Officer Porter as expert diagnostician and advise on measures based on mosquito theories, and to wire all facts relative thereto to the Bureau.

Asst. Surg. W. C. Hobdy was, on December 3, 1901, upon the request of Governor Chandler, directed to proceed to Elberton, Ga., and confer with local authorities relative to smallpox situation.

Asst. Surg. W. C. Billings was, on March 8, 1902, upon the request of the secretary of the State board of health and Health Officer Graham, directed to proceed to Ludington, Mich., to diagnose cases reported to be smallpox.

TO REPRESENT THE SERVICE AT MEETINGS OF MEDICAL AND PUBLIC-HEALTH ASSOCIATIONS.

The following officers have been detailed to represent the Service at the meetings of the various medical and other associations set opposite their names:

Surg. P. H. Bailhache, American Public Health Association, meeting at Buffalo, N. Y., September 16-20, 1901.

Surg. P. H. Bailhache, fifty-second annual meeting of the American Medical Association at Saratoga, N. Y., June 10-13, 1902.

Surg. G. W. Stoner, American Congress of Tuberculosis at New York, N. Y., June 2-4, 1902.

Surg. A. H. Glennan, International Sanitary Conference at Habana, Cuba, February 15, 1902.

Surg. Eugene Wasdin, American Public Health Association at Buffalo, N. Y., September 16-20, 1901.

Surg. P. M. Carrington, American Congress of Tuberculosis at New York, N. Y., June 2-4, 1902.

Surg. P. M. Carrington, American Medical Association, Saratoga, N. Y., June 10-13, 1902.

Surg. L. L. Williams, Association of Military Surgeons at Washington, D. C., June 5-7, 1902.

Surg. R. M. Woodward, American Public Health Association, Buffalo, N. Y., September 16-20, 1901.

Surg. G. T. Vaughan, Association of Military Surgeons at Washington, D. C., June 5-7, 1902.

P. A. Surg. G. M. Guiteras, International Sanitary Conference at Habana, Cuba, February 15, 1902.

P. A. Surg. H. D. Geddings, Conference of Health Officers of Michigan at Ann Arbor, Mich., November 21-22, 1901.

P. A. Surg. M. J. Rosenau, American Public Health Association at Buffalo, N. Y., September 16-20, 1901.

P. A. Surg. M. J. Rosenau, New York State Association of Railway Surgeons at New York, N. Y., November 14-15, 1901.

P. A. Surg. M. J. Rosenau, Second International Conference of American States, as advisor on sanitation and quarantine to United States delegation, City of Mexico, December, 1901, to March, 1902.

P. A. Surg. M. J. Rosenau, New York Academy of Medicine at New York City, February 20, 1902.

P. A. Surg. M. J. Rosenau, American Medical Association at Saratoga, N. Y., June 10-13, 1902.

P. A. Surg. C. P. Wertenbaker, Association of Military Surgeons, Washington, D. C., June 5-7, 1902.

Asst. Surg. Hill Hastings, Southern California Medical Society at Idyllwild, Cal., May 22-23, 1902.

Asst. Surg. C. E. D. Lord, annual session of State Medical Association of Texas, Dallas, Tex., May 6-9, 1902.

REPORT ON MEETING OF AMERICAN PUBLIC HEALTH ASSOCIATION.

By Surg. PRESTON H. BAILHACHE.

PORT OF NEW YORK (STAPLETON), N. Y., *September 25, 1901.*

SIR: In compliance with Bureau order of August 24, 1901, detailing me to represent the Service at the meeting of the American Public Health Association, to be held in Buffalo, N. Y., September 16 to 20, inclusive, I proceeded to that city, and on the 16th instant presented my credentials to the secretary of the association.

Owing, doubtless, to the tragedy resulting in the death of President McKinley, the attendance was small and the interest less than was anticipated. However, there were a number of interesting papers read, chief among which were "Prevention of yellow fever," by Surg. Walter Reed, U. S. Army, and Dr. James Carroll, contract surgeon, U. S. Army; "Some results of the army canteen, or post exchange, from the standpoint of discipline and hygiene," by Surg. Edward L. Munson, U. S. Army; "The influence of school life over health," by Frank W. Wright, of New Haven, Conn.; report of the committee on "National leper homes," by Dr. H. M. Bracken, chairman and secretary State board of health, St. Paul, Minn.; report of the committee on the cause, prevention, and duration of infectious diseases, by Dr. A. Walter Suiter, chairman, Herkimer, N. Y.; report by committee on animal food, by D. V. Salmon, D. V. M., chairman, Chief of Bureau of Animal Industry, Washington, D. C.

The opening address of Dr. Stephen Smith, of New York City, was a surprise to the members of the association, as it dealt with the early and inside history of national legislation in connection with the Marine-Hospital Service. It was stated by Dr. Smith that as early as 1871 and 1872 he and other sanitarians, with Supervising Surg. Gen. John M. Woodworth, United States Marine-Hospital Service (lately reorganized), devised a plan for making the Marine-Hospital Service a national health organization. He then gave a brief history of the National Board of Health, and closed his address with an appeal to the association to indorse the Marine-Hospital Service as the Public Health Service.

A meeting of the members interested in bacteriology was held the first day of the session, in which Surgeon Wasdin, Marine-Hospital Service, and P. A. Surg. M. J. Rosenau, Marine-Hospital Service, took part, the former considering the "Nature and treatment of typhoid fever" from a bacteriological standpoint, and the latter discussing "The vitality of the plague bacillus in its relation to the public health."

Dr. U. O. B. Wingate, of Milwaukee, Wis., read the report of the committee on public health legislation, recommending the "Spooner bill," which was adopted by a vote of 34 to 14.

The association placed itself on record regarding tuberculosis as follows:

"*Resolved*, That, notwithstanding the advances of sanitary science, the mortality from tuberculosis continues to be appalling. It has been demonstrated that by the application of proper measures this mortality may be diminished rapidly to a great degree. Therefore every effort should be made by sanitarians to carry into effect all reasonable methods which have been shown by experience and research to be efficacious toward this end.

"*Resolved*, That the increase of tuberculosis in cattle and swine, as shown by investigation of recent years and by meat inspection statistics, is a serious matter from a commercial as well as a sanitary point of view, and calls for more attention from those responsible for the integrity and protection of the public health.

"*Resolved*, That this association is of the opinion that sufficient facts have not been offered by Professor Koch or other investigators to prove that human and bovine tuberculosis are different diseases; it is fully of the opinion that variability under different environments may on further investigation be found to account for the differences that have been noted, and that the germs of these diseases may yet be proven to be closely allied and identical."

It also went on record recognizing the army canteen, as follows:

"*Resolved*, That this body deplores any action in curtailing the operation of the army canteen, or post exchange, as formerly existing in the United States, and in the interest of general and military sanitation and temperance recommend its reestablishment."

The association took no action on the papers of Surgeons Reed and Carroll regarding the mosquito (Stegomyia fasciata) being the only cause of the spread of yellow fever. The discussion of the subject was confined to one member of the association from the South, Dr. Felix Formento, of New Orleans, and officers of the Marine-Hospital Service, all of whom combated the theory of the mosquito being the only cause of its spread, though all admitted it was one of the causes.

The following officers were elected for the meeting next year, and New Orleans was selected as the place:

President, Dr. Henry D. Holton, Brattleboro, Vt.; first vice-president, Dr. Walter Reed, U. S. Army; second vice-president, Dr. Jesus Chico, Guanajuato, Mexico; secretary, Dr. Charles O. Probst, Columbus, Ohio; treasurer, Dr. Frank W. Wright, New Haven, Conn. Members of the executive committee, to serve for two years: Dr. Gardner I. Swartz, of Providence, R. I.; Dr. W. C. Gorgas, of Habana, Cuba; Dr. J. C. Schrader, of Iowa. Member of the executive committee, to serve for one year, Dr. Fernando Lopez, of Mexico.

The section on bacteriology and chemistry elected the following officers: Chairman, Dr. F. F. Westbrook, Minneapolis, Minn.; vice-chairman, Dr. H. L. Russell, Madison, Wis.; secretary, G. C. Whipple, Brooklyn; recording secretary, Dr. H. D. Pease, New Haven, Conn. Members of the advisory council, Dr. W. H. Park, of New York; Dr. M. J. Rosenau, of Washington, D. C.; Dr. E. G. Horton, of Columbus, Ohio; Dr. Angel Gavino, of Mexico, and the retiring chairman, Dr. Wyatt Johnston, of Montreal, ex officio.

The session closed Friday afternoon, September, 20, 1901. A noticeable fact regarding the attendance was the almost total absence of the medical profession and sanitarians of Buffalo.

Respectfully,

PRESTON H. BAILHACHE,
Surgeon, M. H. S.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

REPORT ON FIFTY-THIRD ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

By Surg. PRESTON H. BAILHACHE.

STAPLETON, N. Y., *June 30, 1902.*

SIR: The American Medical Association convened in Convention Hall, Saratoga, N. Y., on the morning of June 10, 1902, and was called to order by its president, Dr. John A. Wyeth, of New York City.

UNITED STATES HEALTH SERVICE.

Referring to the matter of medical legislation, the president in his address called attention to a bill before Congress known as the Perkins-Hepburn bill, to increase the efficiency and to change the name of the United States Marine-Hospital Service to that of the United States Health Service, and transferring it to the proposed new Department of Commerce and Labor, and said:

"The American Medical Association has on several occasions expressed its desire for the establishment of a department of public health, either as a separate department of the Government or as one of the important bureaus of a department. Probably on account of a lack of thorough organization and cooperation, it has not been able to obtain this important rocognition for the medical profession. In view of these repeated failures, it would seem advantageous to the scheme of establishing ultimately a department of public health that the Perkins bill should become a law, because the United States Marine-Hospital Service could then with more propriety be removed from the new Department of Commerce and Labor into a separate and independent department. This department should be in charge of a medical officer to direct our foreign and insular quarantine, interstate quarantine, the medical supervision of epidemics, and, in fact, all matters pertaining to the general health of any group of States or of the entire country.

"The work of this officer and bureau can only be carried out with success by the earnest cooperation of the health officers of the various localities and States, and of the advisory board for the hygienic laboratory provided for in the Perkins-Hepburn bill, for the national and local authorities acting in harmony would be better able to prevent the importation of disease, and to stamp out epidemics which may occur despite the greatest vigilance, and this with the minimum disturbance of the resident public, and of the commercial interests of more remote sections."

THE ARMY MEDICAL DEPARTMENT.

Attention was called to the efforts of the Medical Corps of the Army to obtain a better status, and he said it was the duty of the profession to cooperate with the corps in its efforts.

CONCLUSION.

After referring favorably to the work of the committee on vivisection, to the wide dissemination of smallpox, to the shortcomings of the medical profession as a whole, and the necessity for a better system of education and a more thorough organization, the president closed with an appeal for a modification of the code of ethics, so that these should be uniform in the profession throughout the United States.

Two new committees were recommended and approved, one on public health and one on medical education.

Committee on legislation.—Drs. R. M. Cunningham, Alabama; William Duffield, Arizona; R. C. Shinault, Arkansas; George H. Evans, California; Charles H. Rodman, Connecticut; H. L. E. Johnson, Washington, D. C.; R. D. Murray, Florida; T. D. Coleman, Georgia; M. P. McCalla, Idaho; Carl E. Black, Illinois; W. N. Wishard, Indiana; B. F. Fortner, Indian Territory; H. B. Young, Iowa; C. A. McGuire, Kansas; J. M. MacCormack, Kentucky; Edmund Souchon, Louisiana; E. McE. Van Ness, Maryland; J. F. A. Adams, Massachusetts; C. E. Hooker, Michigan; H. M. Bracken, Minnesota; W. M. Paine, Mississippi; F. W. McGrimmon, Montana; J. W. Parsons, New Hampshire; J. E. Packard, Nevada; Philip Marvel, New Jersey; G. W. Harrison, New Mexico; E. Elliot Harris, New York City; R. H. Lewis, North Carolina; H. A. Beaudoux, North Dakota; N. R. Coleman, Ohio; S. E. Joseph, Oregon; J. B. Roberts, Pennsylvania; G. T. Swarts, Rhode Island; E. F. Parker, South Carolina; T. J. Happel, Tennessee; J. D. Osborne, Texas; A. C. Ewing, Utah; H. D. Holton, Vermont; E. T. Brady, Virginia; J. B. Eagleson, Washington; W. P. Goff, West Virginia, and U. O. B. Wingate, Wisconsin.

The committee on national legislation, through its chairman, Dr. H. L. E. Johnson, of Washington, D. C., presented a voluminous report entitled "Third Annual Report of the Committee of the American Medical Association on National Legislation, with Transactions of the Third Annual Conference, held in Washington, D. C., April 10 and 11, 1902."

This report comprised 98 printed pages, and although very interesting and instructive, is too long for reproducing in my report of the association's meeting, and I therefore confine myself to such parts of it as are of special interest to the Service, as follows:

"An extensive correspondence resulted between the committee of the American Medical Association on national legislation with Dr. Edmond Souchon, president of the State board of health of Louisiana, and the other State health officers throughout the country and a number of other prominent members of the American Medical Association in relation to the Spooner health bill, the Perkins and Hepburn marine-hospital bill, and the Ray health bills now pending in the National Congress. The correspondence culminated in the calling of a conference of State health officers by Dr. Edmond Souchon, which met at Washington City on the 12th and 18th instants. Among those present were: Dr. Edmond Souchon, president of the Louisiana board; Dr. James Evans, secretary of the South Carolina board; Dr. A. H. Doty, quarantine officer, port of New York; Dr. U. O. B. Wingate, secretary board of Wisconsin; Dr. William H. Welch, president Maryland State board; Dr. H. M. Bracken, secretary Minnesota board; Dr. Henry D. Holton, secretary Vermont board; Dr. Nowber, secretary Delaware board; Dr. Green, of Charleston; Dr. Cooper, of Delaware; Dr. J. F. Durgin, quarantine officer, port of Boston; Dr. McAllister, of Missouri; Dr. T. G. Simmons, president South Carolina board; Dr. Lewis, New York board; Dr. Heller, Pennsylvania board; Dr. W. H. Saunders, State health officer of Alabama; Dr. W. D. Goodman, of Mobile; Surgeon-General Wyman, Marine-Hospital Service, and Dr. H. L. E. Johnson, Washington, D. C., representing the American Medical Association. The above-mentioned bills and their provisions were thoroughly discussed, and the conference decided by a favorable vote of all present except one to recommend the passage of the Hepburn bill, with a slight modification to section 7. The following was adopted, and a committee of three members, consisting of Dr. H. M. Bracken, of Minnesota; Dr. Edmond Souchon, of Louisiana, and Dr. William H. Welch, of Maryland, were appointed, together with Surgeon-General Wyman and Dr. H. L. E. Johnson, to appear before the committee of the House and Senate and urge the adoption of the bill recommended as modified. The committee appeared before the committee of the House on Interstate and Foreign Commerce on the 24th instant, individually addressed the committee on the subject, and presented the matter agreed upon by the conference, as follows:

WASHINGTON, D. C., *March 13, 1902.*

SIR: The president and executive officers of State boards of health and port quarantine officers called to conference by Dr. Edmond Souchon, of New Orleans, met at the Metropolitan Hotel, Wednesday, March 12, to discuss the bills now before Congress bearing upon the creation of a national health service, namely, the Ray bill (H. R. 10595) and the Hepburn bill (H. R. 7189).

Twenty medical men were present, representing all sections of the country. By request Surgeon-General Wyman, of the Marine-Hospital Service, and Dr. H. L. E. Johnson, chairman of the legislative committee of the American Medical Association, were also present.

After a thorough discussion of the bills, a committee of five was appointed to consider the points discussed and report to the afternoon session of the conference. This committee made its report at 5 p. m., recommending but slight change in the Hepburn bill (H. R. 7189). The only change that was suggested in this bill was based upon the wish of the physicians in conference to have the privilege of asking for a conference with the national health authorities at Washington when in their judgment such conference would seem desirable. The changes are embodied in section 7 of said bill, a copy of which section, as amended, is herewith submitted.

"SEC. 7. That when in the opinion of the Surgeon-General of the United States Health Service the interests of the public health would be promoted by a conference with the State or Territorial boards of health authorities, the District of Columbia included, or on application of five State boards of health or quarantine officers, the Surgeon-General of the United States Health Service is authorized to invite representatives of State boards of health and quarantine officers to send delegates, not more than one from each State or Territory and District of Columbia, to said conference, and when thus convened said delegates shall be entitled to reimbursement for their necessary expenses of travel and maintenance, not exceeding five days at the place of conference, in accordance with such regulations as may be made by the Secretary of the Treasury."

With these changes the Hepburn bill (H. R. 7189) was indorsed by the conference, and a committee of three was appointed to present these facts to your honorable committee, it being considered unnecessary to take up the time of your committee with the hearing of a larger number of men.

We are much indebted to Surgeon-General Wyman for advice and consultation in bringing about this harmonious feeling, and we submit our report with the hope that the Hepburn bill may soon become a law.

The necessity for a national health body has long been recognized, and it has long been sorely needed. Such bodies already exist in the countries bordering on the United States, namely: Canada, to the north, and Mexico, to the south.

Respectfully submitted.

H. M. BRACKEN, *Minnesota.*
EDMOND SOUCHON, *Louisiana.*
WILLIAM H. WELCH, *Maryland.*

Hon. W. P. HEPBURN,
Chairman of the Committee on Interstate and Foreign Commerce,
House of Representatives.

On motion, these resolutions were transmitted to the chairman of the committee on national legislation, with the request that they be approved by that committee and the annual conference with the State societies, which meets in June, and that they urge before Congress the passage of the bill as amended.

The same committee had a conference with Senator John C. Spooner, a member of the Committee on Public Health and National Quarantine of the Senate, and discussed the amendments proposed by the conference and urged its passage as amended. After a full discussion Senator Spooner suggested the following verbal changes in the substitute for section 7 of the Perkins bill as modified by the conference, as follows:

"SEC. 7. That when in the opinion of the Surgeon-General of the United States Health Service the interests of the public health would be promoted by a conference with the State or Territorial boards of health or health authorities, the District of Columbia included, he may, or on application of five State boards of health or quarantine officers, the Surgeon-General of the United States Health Service shall, invite representatives of State boards of health and quarantine officers to send delegates, not more than one from each State or Territory and District of Columbia, to said conference."

The committee, including the Surgeon-General of the Marine-Hospital Service, Dr. Wyman, and the chairman of the committee on national legislation of the American Medical Association, Dr. H. L. E. Johnson, approved of the recommendation of Senator Spooner and presented the following, to be used by him in connection with their original recommendation when the matter is taken up for consideration by the House and Senate committees:

WASHINGTON, D. C., *March 13, 1902.*

SIR: We, the representatives in the committee of the conference of State health officers, approve of the suggestions offered by you and set forth in the inclosed modified section 7 of Senate bill 2162, known as the Perkins bill, and in so doing feel that we are expressing the views of the conference.

Respectfully,

H. M. BRACKEN, *Minnesota.*
EDMOND SOUCHON, *Louisiana.*
WILLIAM H. WELCH, *Maryland.*

Hon. JOHN C. SPOONER,
United States Senate.

Doctor JOHNSON. This bill with its amendments is submitted to you with the approval of the committee on national legislation for your indorsement. We also approved and indorsed the preamble, resolutions, and proposed bill providing for the retirement of Surgeon-General Sternberg with the rank of major-general, U. S. Army. This latter bill was taken up out of the regular order, and has been indorsed by you at this meeting.

Your committee on national legislation has always been influenced in what it does or recommends by its knowledge of the wishes of the American Medical Association. Where a particular measure has come up before Congress, we, instead of deciding offhand, have always endeavored to learn the wishes of the medical profession, and we never permit our own individual feelings to influence us too much. We consider ourselves the representatives of the medical profession, and we appreciate that we have grave responsibilities to deal with. We hope we have made no mistakes, and that our acts will receive the approval of the American Medical Association and of this conference. There is nothing of more importance to this conference and the general medical profession than thorough State organization for the care and direction of legislative matters. We have repeatedly urged this. Each State should have its legislative committee, and that committee should be in touch with every medical man of the State society, and we should be in touch with each and all of the State committees. By not having systematic organization throughout the country a great deal of benefit which would necessarily result is lost to the profession. We should be one of the most powerful organizations on earth in guiding or originating public health legislation. We are not for the benefit of doctors personally, but for the profession as a body. We urge most strongly that you do all in your power to accomplish the recommendations which we made in the first and second conferences with respect to State legislative organization. Delegates should be appointed by each State and Territory medical society and their expenses defrayed by the individual States when they are called to attend the annual conference or to assist this committee in its work in the national congress. The delegate comes to the conference in the interest of the medical profession of his State, and his services should be appreciated.

Doctor **Egan**, Louisiana. Representing Louisiana, through the borders of which the great Mississippi passes and enters the Gulf, and suffering as we do and have done for the last century, or a little over, with yellow-fever epidemics at times, we have for a long time considered the importance of a national sanitary organization to educate the people in sanitary measures, not only against the prevalence of yellow fever, but a large number of diseases. We should have that board to instruct the people as they did in the North, where they had the disease long before we had it in the South. We know that it is stamped out by sanitation. We know what sanitation did for Memphis in 1878 and 1879. We know that their water supply was from wells in one corner of the cellar and the sink in another corner. All the dumping was done in the river and the high water supply carried it into the city. Although we had it in 1897, 1898, and 1899 on the borders of Louisiana and Mississippi, and various other points, they could not have it in Memphis, due to Waring's method. We want the people educated in matters of sanitation. We advocated this measure for over a decade, and it is known as the Spooner-Ray bill. A compromise was made on the Perkins bill. If Senator Spooner's suggestion to make the call of thė conference mandatory or some other measure, by which there shall be an advisory council which will discriminate as between States, I think the profession of Louisiana will favor the bill of the present name without any amendment and without any change. It is a step in the right direction. I would not advocate the Perkins bill as over the Spooner-Ray bill. I move that this conference urge upon our Representatives and Senators to make it mandatory, and require them at the instance of five States, and have the Surgeon-General appointed as chief of this institution, and let the States pay the bills.

Doctor **Welch**, Maryland. The Perkins-Hepburn bill has been reported favorably to the Senate.

General **Wyman**, United States Marine-Hospital Service. As is known to most of you, a convention of State health and quarantine officers met in Washington on March 12, for the purpose of considering this bill, it being considered objectionable by a number. I had the pleasure of meeting with these gentlemen, and, after fully explaining the dfferent sections of the bill, and there being an evident desire on the part of all present to bring about an understanding, we arrived at a conclusion favoring the bill with a slight modification of one of its sections. This convention, as you know, appointed a committee to urge the passage of the bill with the accepted amendment, and accordingly the committee appeared before the House Committee on Interstate and Foreign Commerce on March 13. The chairman of the committee, Colonel Hepburn, regretted that the meeting of his committee was not a formal meeting for the consideration of the bill, as he felt confident the committee would otherwise be willing to pass favorably upon it. On March 15 the committee appointed by the convention appeared before the Senate Committee on Public Health and National Quarantine, where a formal hearing was given. The sentiment of all the Senate committee was entirely favorable toward the bill with the Spooner amendment. There was some question as to the phraseology of this amendment, and it was referred to a subcommittee to put it in form in accordance with the wishes of the full committee. They are about to take the matter up, I believe. They have as yet had no meeting, but I am confident they will report the bill in a short time.

Doctor **Cunningham**, Alabama. Will Dr. Wyman give us the substance of that bill—the Perkins-Hepburn?

General Wyman read the following: "A bill to increase the efficiency and change the name of the United States Marine-Hospital Service has been introduced in the Senate (S. 2162) by Mr. Perkins, and in the House of Representatives (H. R. 7189) by Mr. Hepburn."

(The provisions of the bill by sections, with comments on the same, have already been published in the Public Health Reports of the Service, and are consequently omitted in this report.)

COMMITTEE ON PUBLIC HEALTH.

The president appointed the following committee on public health: Dr. Charles O. Probst, Columbus, Ohio; Dr. John N. Hurty, Indianapolis, Ind.; Dr. W. H. Sanders, Mobile, Ala.; Dr. H. A. West, Galveston, Tex.; and Dr. W. C. Gorgas, U. S. Army.

I find my report is likely to be too long if I make note of all the sections, and I will therefore pass by the work done in the sections on obstetrics and diseases of women and children; on ophthalmology; on stomatology; on nervous and mental diseases; on laryngology; on materia medica, pharmacy and theurapeutics; on physiology and pathology; and confine myself to the section on hygiene and sanitary science.

Surgeon-General Wyman read a paper entitled "Sanitation and Politics," which he stated was of a preliminary nature and mainly intended to bring the subject before the section and stimulate further investigation. After explaining the object of hygiene and sanitary science, he said it would make an interesting chapter to detail the interferences caused by faulty politics with sanitary affairs, and alluded to the shameful sacrifice of health matters to the selfish and unrighteous interests of unworthy politicians. But bad politics should be remedied and an effort made to incorporate sanitary subjects in our political campaigns. Political issues might be made on disinfection, the condemnation of unsanitary buildings, the elimination of slums, converting foul alleys into sanitary streets and courts, the disposal of sewage, the securing of a pure water supply, the erection of sanitary tenement houses, and in the appointment of health officers and boards of health, etc. Sanitation may be made a live issue in politics and candidates for office made to see that sanitary matters are superior campaign arguments.

The subject was discussed by Doctor Marcy, of Boston; Doctors Stephen Burt and Knopf, of New York; Doctor Egbert, of Philadelphia, and others, all agreeing that the paper was timely, and that the necessity of forcing the subject of sanitation into the minds of politicians should be emphasized.

The "Drainage Canal of the Valley of Mexico" was the title of a paper read by Doctor Marcy, of New York, in which he showed the stupendous undertaking by the Mexican Government, and the beneficial results to follow its completion.

Dr. W. K. Jacques, of Chicago, read a paper on the "Microscopic aid in the diagnosis of scarlet fever," stating that he invariably found the "Class" coccus in this disease, but that it might be mistaken for the *Staphylococcus albus*. He stated that the initial clinical symptoms taken with the microscopical findings would establish the diagnosis absolutely. Discussion was held upon this paper as to the coexistence of diphtheria and scarletina, and as to whether Röthelen can be differentiated by the miroscope.

A discussion was had on the subject of municipal control of vaccine and antitoxines, participated in by Doctors Marcy and Knopf, of New York; Benjamin Lee and Egbert, of Philadelphia; Johnson, of Illinois; Bracken, of Minneapolis; Stubbert, of Liberty, N. Y.; Reynolds, of Chicago, and others. The consensus of opinion favored municipal control instead of the manufacture by private individuals for gain.

Dr. S. A. Knopf, of New York, read a paper entitled "Present Aspect of the Tuberculous Problem in the United States; State and Municipal Sanatoria." He gave a graphic account of the prevalence of the disease in the United States and exhibited statistics showing what is being done and what is not being done in the care of consumptives in the several States. He also showed several kinds of sputum cups for use by persons suffering with tubercle of the lungs.

Dr. D. M. Appel, U. S. Army, read a paper on the United States sanatorium for treatment of pulmonary tuberculosis and presented a tabulated statement of the disease at the army sanatorium at Fort Bayard, N. Mex., showing the great benefit derived by those transferred to the same. He was followed by Dr. Paul M. Carrington, Marine-Hospital Service, whose paper on sanatorium treatment for pulmonary tuberculosis based upon experience at Fort Stanton, N. Mex., where the Service has established a sanatorium for seamen suffering with this disease. Both papers indicated the same line of treatment, consisting principally of out-door life, nourishing food, and rest.

Abstracts of the papers, by Drs. D. E. Salmon, of Washington, and D. R. Dinwiddie, on human and bovine tuberculosis, were read and created considerable discussion, it being generally agreed that the disease is intercommunicable.

Dr. J. Evans Stubbert, of Liberty, N. Y., read a paper on the treatment of pulmonary tuberculosis from the sanatoria standpoint. It referred to medication, surgical operations, and the use of the X-ray.

HUMAN AND BOVINE TUBERCULOSIS.

A long discussion which had been deferred on account of the absence of several members who wished to participate in it was had later in the session. The following-named gentlemen spoke: Doctors M. P. Ravenel, Knopf, Reed, Miner, Stubbert, Bracken, Moore, Bonney, Appel, and Benjamin Lee. At the conclusion of the discussion the following resolution was introduced by Doctor Knopf and seconded by Dr. Benjamin Lee:

"*Resolved*, That in view of our knowledge that several European governments have established national government tuberculosis commissions and recognized the fact that tuberculosis is likewise with us a very prevalent and preventable disease, the section of hygiene and sanitary science recommends that the American Medical Association address an appeal requesting the proper Federal authorities to create a United States national commission for the study, mitigation, and prevention of tuberculosis in man and animals."

Dr. H. M. Biggs, of New York, read a paper on sanitary measures for the prevention of tuberculosis in New York City and their results.

Dr. Herman Spalding, of Chicago, read a paper on some facts about smallpox and vaccination.

Dr. E. F. Wells, of Chicago, read a paper on pneumonia, its increasing prevalence and fatality, with suggestion for individual and communal prophylaxis.

Dr. J. J. Walsh, of New York, read a paper on the epidemicity and increasing fatility of pneumonia.

Dr. S. E. Jelliffe, of New York, read a paper on influenza and the nervous system.

Dr. F. E. Wynekoop, of Chicago, read a paper on a further study of the influenza bacillus.

At the close of the session, Doctor Bracken, of Minneapolis, was elected chairman of the section for next year.

General sessions were held each evening at the last session, the business being the installation of officers elected for the ensuing year, Doctor Wyeth retiring and Doctor Billings taking the president's chair.

The exhibits displayed were numerous; among them the laboratory of the Marine-Hospital Service was represented.

Respectfully,

PRESTON H. BAILHACHE,
Surgeon, M. H. S.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

REPORT ON AMERICAN CONGRESS ON TUBERCULOSIS.

By Surg. G. W. STONER.

NEW YORK, N. Y., *June 12, 1902.*

SIR: In pursuance of your letter of the 23d ultimo, detailing me to represent the Service at the meeting of the American Congress on Tuberculosis in New York, N. Y., June 2, 3, and 4, 1902, and directing me to make a report of the proceedings of the congress, paying particular attention to anything of interest to the Service, I beg to submit the following:

I attended the meeting as directed, was present at all sessions, and also acted as chairman of the nominating committee.

The congress was convened on the morning of the 2d instant, and there were present over 100 delegates, representing many States and Territories, Canada, Mexico, and Central and South American Republics. The United States public services were represented by medical officers of the Army, Navy, and Marine-Hospital Service.

Dr. A. N. Bell, honorary president of the congress, called the meeting to order and delivered the address of welcome to the delegates. Among other things, he said: "Appreciating your record as chosen delegates approved by national and State authorities and scientific organizations from all sections of this country and of neighboring countries, your presence is representative of accepted knowledge of tuberculosis and special competency for the consideration of practical measures to effectually resist it. It is doubtless within the recollection of some of you here present, as of him who addresses you, that about fifty years ago Minnesota was the Mecca par excellence of consumptives in this country and of many from abroad. But time, increase of population, and better knowledge of the disease, have so nearly dissipated the fallacy of the whilom belief in such conditions being particularly favorable for the prevention or cure of the disease, that Minnesota has ceased to be thought of as a favorable resort. Meanwhile, Minnesota has been supplanted by Colorado, but since the repeated demonstrations during recent years that the atmosphere of the high altitudes in Colorado, as elsewhere, is no less congenial to the cultivation and propagation of tubercle bacilli than that of sea levels and the increase of population in Colorado, the fame of that State as a beneficial resort is rapidly falling to the same level as Minnesota. New Mexico is for the present in the ascendancy, and its relation to tuberculosis is now much as was that of Colorado thirty years ago, and of Minnesota thirty years earlier, excepting the advantage of better regimen under the auspices of the Army, Marine-Hospital Service, and other well-appointed sanatoria. Hence, for the while tubercle bacilli are in abatement."

Mr. Clark Bell, secretary and treasurer of the congress and president of the Medico-Legal Society, also spoke in welcome, and among other things, said: "This meeting is the fruit of great labor to interest and arouse a public sentiment not only in every portion of our country, but in every country on the Western American continents, in this great struggle. A glance at the programme of this congress, and of the list of men holding high official positions in our own, and all these countries, and their letters will show the deep interest everywhere felt in the success of the labors with which this body has charged itself. It has resolved itself into a campaign of education, not only of the masses of the people of all these countries, but of both the legal and the medical professions, in the great problems presented in the conflict that is impending. I deem it one of the most gratifying features of our labor, and I ask to have placed on the record of this body the letters of the State Department of the American Government—and express to our Secretary of State the great pleasure which the action of the Government aroused in our official boards."

The president of the congress, Dr. Henry D. Holton, of Vermont, was then introduced and made the opening address.

He said there are more than 500,000 persons in this country and insular possessions suffering from tuberculosis. He urged that definite steps be taken toward the suppression of the disease, from which about one-seventh of the world's population dies every year. He said that the consensus of opinion is that the tuberculosis bacillus is not transmitted from parent to child, but there are certain inherited conditions which predispose the child to tuberculosis, such as nervous temperament and sluggish gland secretion. Among the chief exciting or direct causes he mentioned intemperence, insufficient clothing, living in filthy, damp localities, overcrowding, and improper food. As to means of prevention he urged education of the masses in better methods of living, the necessity of clean, well-ventilated houses, properly cooked food, and the avoidance of all excesses which reduce vitality. With proper care patients might remain in their own family without danger of infecting them, but in many cases, especially among the poor, this is not practicable, and for them sanatoriums should be opened and those already established should be multiplied. He dwelt upon the propagation of tuberculosis by the expectoration of the sufferers, and also from meat and dairy products. He referred to the experiments of Professor Behring relative to the identity of the bacillus of human and bovine tuberculosis, and said there were numerous cases in which persons have been infected by drinking the milk of tuberculous cows, Professor Koch's recent announcement to the contrary notwithstanding.

Following the presidential address there was a call of States, to which all the delegates responded, and many took occasion to speak briefly on the tuberculosis problem which especially concerned their own localities.

The reading of papers and consideration of the symposiums was then taken up. A number of papers and addresses were read and several resolutions were adopted.

Dr. E. J. Barrick, of Toronto, submitted the following resolution, which was adopted:

"That it is the duty of every government, municipality, and individual citizen to adopt organized methods for lessening the spread of a disease which is causing, directly or indirectly, probably one-fifth of the total deaths in almost every country of the world."

Dr. Charles O. Probst, of Ohio, said that overcrowded tenements and factories were the chief causes of tuberculosis, and was of the opinion that the prevention of the disease ought to be taught in the public schools. He said that if the course of study of weakly children in school was cut down one-half and the time devoted to physical culture there would be less tuberculosis in the community.

Ex-Coroner Moritz Ellinger said that pure air and good nourishment were good remedies in cases of tuberculosis, and that the disease was infectious, but not transmitted by heredity.

Dr. C. W. Peck, of Vermont, said that tuberculosis was a contagious disease, and said that if it were not for the power of resistance in our bodies the people of this country would be wiped out by consumption, because myriads of bacilli from the sputum of infected persons are daily expectorated in the streets and public places.

Doctor Paschal, of San Antonio, Tex., said it would be unlawful to invade a home and remove a person suffering with tuberculosis to a sanatorium. He added that the United States Government, while prohibiting tuberculosis-infected immigrants from landing here, did nothing to protect the millions of traveling people from consumptives who are constantly going by train and boat from State to State.

Dr. J. J. Kinyoun, of Pennsylvania, described tuberculosis as "the great white plague," which destroyed more people than all other plagues, and said that the warning given from the house tops by the so-called "cranks" that the disease was contagious was being listened to and slowly accepted. The medical profession viewed with satisfaction the concerted action against tuberculosis in every civilized country. He reviewed briefly the history of bacteriological study, and made the suggestion that the organism known by the name of bacillus tuberculosis may not be, after all, a bacillus proper, but may belong to a higher group of organisms. Like previous speakers at the congress, he expressed dissent from Professor Koch's announcement last summer that bovine tuberculosis could not be communicated to human beings. How he could come to that conclusion on the data which he presented in his paper is more than remarkable. He must have been in possession of other facts which he did not make public. If there is anything which appears to be thoroughly established by medical records it is the transmission of bovine tuberculosis. He dwelt especially on the importance of the investigation of mixed infections. There is hardly a fatal case of tuberculosis which is not found to be complicated by a mixed infection of some sort. The infection may be thus complicated by almost any of the organisms causing disease.

Dr. H. E. Lewis, of Vermont, discussed "The importance of individual predisposition in the development of tuberculosis," and in the course of his remarks said: "It is a certain fact, absolutely incontrovertible, that while at least 50 per cent of mankind are susceptible to the bacillus of tuberculosis, only 14 per cent really die from its harmful effects. That in spite of the evidence that nearly one-half of mankind had been proof against its influence, the universal belief still is that bacterial virulence is the most potent factor in the causation of tuberculosis. Personal resistance to the disease has been demonstrated to be far more potent as a protective force than the tubercle bacilli are for attack." As a proof of this he quoted a statement that nearly 95 per cent of those exposed to infection of periods of from three months to two years failed to develop the disease. Attendants of sanitariums, too, rarely seem to develop the disease.

Dr. H. C. Fairbrother, of East St. Louis, read a paper on "The contagiousness of tuberculosis, as illustrated in one family," the members of a family of six dying one after another.

"The report of this case is given out," he said, "for the purpose of enlightening this Congress, for it is presumed that its members are harmonious upon the subject of both the infectious and contagious character of tubercular consumption; but if this congress is to fulfill its higher mission of spreading enlightenment to the public and rendering aid to State and municipal authorities with regard to the best means of prophylaxis, it must extend its work in the direction of the accumulation of statistics and present the result of its labors in the most tangible and effective form."

Dr. H. McHatton, of Macon, Ga., in discussing "Tuberculosis and environment," said, among other things, that tuberculosis was unknown in plantation days in the South, when the negroes were well looked after and were not surrounded by misery and squalor as they are to-day.

Dr. D. E. Salmon, of the Bureau of Animal Industry in the United States Department of Agriculture, in speaking on the subject of "Veterinary aspects of tuberculosis," said among other things: "We may admit that there are many cases in which infected milk is consumed by children without producing bad results, and at the same time believe that in numerous other cases the disease is communicated. Infected milk may often be fed to pigs and calves experimentally without producing the disease, but we know from clinical observation that tuberculosis is frequently found in calves and pigs, where it must have been caused by tubercular milk." He suggested that observers were often misled by the fact that tuberculosis from infected food is likely to attack glands of the head, neck, and thorax, and the lungs. Such cases, however, are usually classed with those due to other sorts of infection. Of the bacillus of bovine tuberculosis, he continued, "I know of no other germ virulent for such a wide range of animal life that is not also virulent for mankind. * * * Investigations would seem to prove that the bovine bacillus may cause tuberculosis in man, but in my opinion they do not prove that we should expect to obtain such virulent bacilli in all cases of disease produced in that manner. The bovine bacilli may, in some cases, retain their original virulence for a considerable time, but in others it appears to me they might be more or less modified and escape identification."

The congress on tuberculosis closed its annual meeting on the afternoon of June 4, 1902, after adopting further resolutions and electing officers for the ensuing year.

The preamble to the resolutions declared that "Tuberculosis is ordinarily communicated from person to person by means of the dried sputum of a consumptive patient, and that the spread of tuberculosis could be largely controlled by proper care of such sputum and the enforcement of comparatively simple measures; that health authorities should spread as widely as possible correct information as to the manner in which the disease is produced and the means to be employed for its prevention."

The following resolutions were adopted:

"That we believe it to be the duty of the National, State, and municipal governments to enact rational methods for the prevention of tuberculosis, and we recommend the establishment of institutions for the care of indigent consumptives.

"That there should be State and municipal supervision of all public conveyances used for the transportation of passengers, and in view of the fact that spitting on the floors of public conveyances favors the spread of tuberculosis and is injurious to the public health, it is recommended that transportation companies be induced to pass and enforce rules against this act.

"That all cases of tuberculosis should be reported by the attending physician to the health boards for the purpose of the disinfection of houses occupied by consumptives.

"That appropriations should be requested from State and municipal governments for the publication and distribution of literature as a means of education in the prevention of the spread of tuberculosis."

The new officers of the Congress will select the place for the next annual meeting and make all the arrangements.

The officers elect are: honorary president, Dr. H. D. Holton, of Vermont; president, Dr. Daniel Lewis, of New York City; vice-presidents, Dr. J. E. Eagan, of Illinois; Dr. Frank Paschal, of Texas; Dr. E. J. Barrick, of Toronto; Dr. J. A. Watson, of New Hampshire; Dr. Romola, of Guatemala; secretary, Dr. George Brawn, of Georgia; treasurer, Dr. P. H. Bryce, of Toronto.

Respectfully submitted.

GEO. W. STONER,
Surgeon, M. H. S.

The SURGEON-GENERAL MARINE HOSPITAL SERVICE.

REPORT ON MEETING OF AMERICAN PUBLIC HEALTH ASSOCIATION.

By Surg. EUGENE WASDIN.

BUFFALO, N. Y., *November 5, 1902.*

SIR: I have the honor to report that in compliance with your detail of September 13 I attended the meeting of the American Public Health Association held in Buffalo, N. Y., from September 16 to 20, 1901. Owing to the pressure of the current duties of the station I was not able to attend regularly the sittings, and am therefore unable to submit a very detailed report of them.

The meeting has been one of the most satisfactory of the association, and the presidency of Dr. Benjamin Lee, the accomplished sanitarian, was all that could be desired. The attendance was unusually large, most of the States being represented by their health officials, as were our neighbors the Dominion of Canada and the Republic of Mexico, as well as many of the South American States, whose accomplished representatives added dignity and luster to the proceedings. Owing to the recent and heartrending bereavement of the Nation in the death of President McKinley in this city the proceedings were naturally marked with a degree of decorum which gave evidence of the collective and individual appreciation of the great loss sustained.

The president's address was replete with that thorough appreciation of the laws of sanitation for which he is so justly distinguished, and his word pictures of the birth of national sanitation under Theodoric, the barbarian ruler of Italy, and that of universal sanitation under the lead of the United States, offering to view the sanitary pictures of Habana before and after American occupation, charmed all who heard them. His closing appeal was that our sanitary knowledge should be generously shared by us with all peoples of the earth "so that local epidemics may be stamped out at the place of their birth, the annoyances, vexations, and losses incident to maritime quarantine may become things of the past, and wide-spread pestilence be no more known upon the earth." This, he concluded, will constitute the universal epoch, the era of the world's sanitation of absolutism and precision.

Among the papers offered for consideration, those upon the subject of the infectious diseases were timely and most important. That upon the relation of bovine and human tuberculosis was ably presented by Prof. D. E. Salmon, who is impressed, from experimental and clinical data, with the belief of the intercommunicability of the disease between man and animals, and is convinced of the practical utility of the measures now being generally enforced for the prevention of the disease through the destruction of diseased meat and milk. In this field of the acute infections, yellow fever and its convection by means of the Stegomyia fasciata held a prominent place. The presentation of the facts attending the demonstration of such convection by the mosquito was made by Surg. Walter Reed, of the Army, under whose direction had been conducted the experiments which seemed to prove conclusively the value of the brilliant discovery of this fact by Dr. Carlos Finlay, of Habana, Cuba, to whose pioneer work the essayist had been able to add factors of much value. Upon the apparent results of his experiments Surgeon Reed advocated the abolition of the present methods of quarantine against the importation of this disease and the substitution therefor the effort to exterminate the Stegomyia fasciata. This policy was opposed by Dr. Felix Formento, of New Orleans, and myself, on the ground of its radicalism and its foundation upon too little actual information as to other possible modes of the transmission of the disease for its acceptance in lieu of the methods which had proved so effectual in the past when the welfare of the Stegomyia had not been a factor in their execution. The time-honored theory of the convection of yellow fever by fomites, although the demonstration of such convection by the mosquito had limited its scope, was held by these members not to have been abrogated thereby, and I called attention to the fact that the influence of changes of temperature upon the Stegomyia, as shown by Dr. Reed, was the same as that known to occur in the case of natural infections with the bacillus Icteroides—those temperatures known to benumb and destroy the insects being the same at which the bacillus becomes attenuated to the point of noninfectiveness. The increased interest in the work of the section of pathology and bacteriology indicates the growing appreciation of sanitarians of the methods of precision, especially of such methods in diagnosis or detection of the preventable diseases, and the technical papers there presented were of much value. An interesting feature of the meeting was the presence of a number of representatives from our army posts in the Philippines and in Cuba and in Porto Rico, their papers serving to more thoroughly acquaint the association with the admirable work being done in those countries in the direction of sanitary reform. No portion of our brilliant military record can surpass that of the Medical Department of the Army in our new possessions, whose devotion to an arduous duty well deserves the success which it has won. In all these countries an "absolutism" of sanitation has walked hand in hand with military "precision," and the result has amply justified the expectation so well expressed by the retiring president in his address, that absolutism in sanitation offers the best results toward that "era of world's sanitation;" an absolutism of good faith, which shall recognize in the face of all contingencies, sanitary and commercial, that the health of the people must be held above all claims else by those intrusted with authority, and which shall insure to the people the observance of the cardinal rules which conserve their health, prompt notification after detection, and the institution of such measures of protection and prevention as may be required under existing circumstances.

With the election of the veteran Henry D. Holton, of Vermont, as the president for the ensuing year, and the selection of New Orleans as the place of the next meeting, the association adjourned, after having expressed, in appropriate resolutions, drawn by a committee composed of members from each country represented, its deep sorrow for the untimely death of the President of the United States.

Very respectfully,

EUGENE WASDIN, *Surgeon.*

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

REPORT ON FIFTY-THIRD MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

By Surg. P. M. CARRINGTON.

FORT STANTON, N. MEX., *November 3, 1902.*

SIR: I have the honor to submit the following report of the meeting of the American Medical Association at Saratoga, N. Y., June 10 to 13, 1902:

I attended the meeting of the section on hygiene and sanitary science; the meetings of this section were well attended. Surgeon-General Wyman presented a paper on "Sanitation and politics," in which he advocated the making of sanitation an issue in politics as an aid to the spread of sanitary knowledge, which elicited much favorable comment.

A considerable portion of the time of the section was taken up with various papers on tuberculosis. Dr. S. A. Knopf, of New York City, read a paper containing much valuable information as to precautionary measures, legislative or otherwise, taken in different States and municipalities for the prevention of the spread of tuberculosis. His paper included reports from forty-seven States and Territories and certain cities. Surg. Maj. D. M. Appel, U. S. Army, and your representative, presented papers showing the results of the treatment of tuberculosis at the army sanatorium, at Fort Bayard, N. Mex., and the marine-hospital Sanatorium, at Fort Stanton, N. Mex., respectively. The results reported and conclusions reached by Major Appel and myself were remarkable for their similarity. Doctor Bonney, of Denver, reviewed the subject of sanatorium treatment in general in an article indicating the classes for which sanatorium treatment is indicated, as well as for those for whom it is contraindicated. Dr. Herman M. Biggs, of the New York City board of health, read a very interesting article on the subject of sanitary measures for the prevention of tuberculosis in New York and their results. He demonstrated a decrease in the death rate from tuberculosis of 35 per cent in fifteen years. In all more than twenty papers were read at the meeting of this section.

Pneumonia, influenza, smallpox, and vaccination received consideration by the section; Dr. J. D. Schamberg, of Philadelphia, giving a lantern-slide demonstration of smallpox and diseases apt to be confounded therewith, which was of much interest and calculated to be beneficial.

Respectfully,

P. M. Carrington, *Surgeon.*

The Surgeon-General Public Health and Marine-Hospital Service.

Report on Meeting of American Public Health Association.

By Surg. R. M. Woodward.

Washington, *September 26, 1901.*

Sir: I have the honor to submit herewith a report of the transactions of the American Public Health Association, which met in Buffalo, N. Y., September 16 to 20, 1901, inclusive, I having represented the Service at said meeting, conjointly with Surgeon Bailhache, Surgeon Wasdin, and Passed Assistant Surgeon Rosenau, in pursuance of Bureau orders of September 13, 1901.

No session was held on Thursday, September 19, on account of the burial of the late President.

The address of President Lee of the association, read by Doctor Gihon, U. S. Navy, retired, was an able production on general public health matters, but did not deal specifically with the national health administration of the United States.

Dr. Stephen Smith, of New York, one of the oldest living ex-presidents of the association, was the guest of honor and delivered, by request, an address in which he recited the various efforts in the way of public health legislation which have been made since the organization of the American Public Health Association. He stated that, at first, the association advocated building up the Marine-Hospital Service into a national public health organization; that later on various plans had been proposed for the establishment of a department or commission of public health independent of the Marine-Hospital Service, but that such efforts had invariably failed, and that in the meantime the Marine-Hospital Service had grown in size and importance to that stage where he considered that the efforts of the association should be turned toward the elaboration of a public health service based upon said Marine-Hospital Service, as originally intended by the association. His paper was very carefully prepared, contained a great deal of historical data, and was well received by the association. A vote of thanks was given to Doctor Smith at the conclusion of his address.

A number of interesting topics were discussed. Aside from the address of Doctor Smith above mentioned, the most notable paper presented to the association was that of Maj. Walter Reed, U. S. Army, entitled "The prevention of yellow fever." The deductions of Major Reed were based upon his investigations in Cuba on the subject of the mosquito as the agent which carries the infection of yellow fever. Major Reed advocated the abolition of disinfection of baggage from yellow fever ports as an unnecessary procedure. The paper was discussed by Doctor Formento, of New Orleans, and by Doctor Wasdin and Doctor Rosenau of this Service. It would appear from the remarks of Doctor Formento that the people of his State are not yet ready to abolish disinfection of baggage, this safeguard having been depended upon for so many years.

At the last day's session the report of the committee on public health legislation was submitted by Dr. U. O. B. Wingate, of Milwaukee, Wis. This report advocated a further effort to pass the so-called Spooner bill. At the time the committee report was presented a large number of the delegates had left for their homes and the attendance was small. The usual formal motion that the report be accepted was made. Doctor Gihon offered an amendment to the motion to the effect that the report be not only accepted, but that it go forth as the voice of the association. Surgeon Bailhache, of the Marine-Hospital Service, moved that this amendment be laid on the table. Doctor Gihon withdrew the amendment. The original motion that the report be accepted was then put by the president and carried. A division was called for by Surgeon Bailhache and the secretary counted 34 votes for and 14 against the motion. The motion required a two-thirds majority to pass, the number counted in the affirmative being slightly in excess of the necessary two-thirds. Included in the affirmative votes, however, were the Mexican delegates, probably 6 or 8 in number, some of whom understood little or no English, and were voted in accordance with the direction of those in favor of the motion. Surgeon Bailhache raised the point that the Mexican delegates could not properly vote upon a question which concerned the public health administration of the United States alone. The point was not sustained by the chair. The delegates of the United States Army voted with the Marine-Hospital Service in opposition to the motion. Quite a number of those in attendance voted on neither side.

Dr. Henry D. Holton, of Brattleboro, Vt., who has been the treasurer of the association for nine years, was elected president, and New Orleans was selected as the place for the next meeting.

The meeting adjourned Friday, September 20, 1901.

Respectfully,

R. M. WOODWARD,
Surgeon, M. H. S.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

REPORT ON CONFERENCE OF HEALTH OFFICIALS OF MICHIGAN.

By P. A. Surg. H. D. GEDDINGS.

WASHINGTON, *November 25, 1901.*

SIR: Obedient to the orders contained in Bureau letter of the 18th instant, I have the honor to report that I proceeded to Ann Harbor, Mich., arriving at that place on the afternoon of November 20, 1901. The object of my detail being to attend the conference of health officials of the State of Michigan, November 21 and 22, 1901, I at once placed myself in communication with the chairman of the local committee of arrangements, Prof. Victor C. Vaughan, and awaited the first meeting, which was held at 3 o'clock on the afternoon of the 21st instant. This time was spent in visiting the various university buildings, especially those adapted to laboratory work, and I believe was far from wasted, as I saw many things which will form the subject of a separate report.

The address of welcome, delivered by Hon. James B. Angell, president of the University of Michigan, was pertinent and cordial, and he dwelt with particular interest on the close relations which must exist between boards of health and an institution such as the University of Michigan, where laboratory work forms such an important feature of the course of instruction.

The objects of the conference were then briefly stated by Hon. Frank Wells, president of the State board of health, and the conference immediately proceeded to business.

The paper marked No. 3, first session, by the director of the hygienic laboratory of the public health service of the State, was then presented by Prof. Victor C. Vaughan, director of the laboratory. It was an able presentation of the work accomplished for the State and local boards of health by the hygienic laboratory of the University of Michigan, and contained many suggestions of value, which, however, were of purely local interest, showing how the value of such work could be increased by a better understanding of the means and ends of a laboratory.

I would invite particular attention to the paper, No. 5, presented by Dr. A. W. Crane, of Kalamazoo, Mich., in which Doctor Crane made a forceful statement of the good that can be accomplished in the recognition and prevention of the spread of contagious and infectious diseases by health officers who have enjoyed the advantage of training in medical methods in schools where laboratory work is made a special feature.

The paper, No. 6, was one of special interest, as it took up the subject of the transportation of those sick with communicable diseases, with special reference to tuberculosis. It led to an animated discussion, and upon motion of Doctor Baker, a committee was appointed to take up this important matter for conference with the various transportation companies in the State of Michigan. A concensus of opinion seemed to be, however, that the more practicable method of dealing with the question of the danger to the public health by the traveling of consumptives would be to enter into a thorough campaign of education in the matter of enjoining care upon tuberculosis patients in the disposal of their sputum. A very strong sentiment was evidenced, in which I heartily accorded and so expressed myself, that it was to be deprecated that the unfortunate victim of tuberculosis, in addition to his misfortune, should feel himself regarded as a social pariah. The sweeping assertion of Professor Koch at the tuberculosis congress in London was deprecated, that bovine tuberculosis was incapable of being conveyed to human beings, for the prejudicial effect which his assertion might have upon measures which have already been adopted looking to the prevention of the spread of the disease, but it was felt that he had struck the key note of the situation that it was the sputum of the tuberculous patient which was a danger to the public health.

Papers Nos. 7 and 8 of the first session presented nothing of special interest.

The second session opened at 8 p. m. on the evening of Thursday, the 21st. The paper by Doctor Carrow on the muscular anomolies in children dwelt particularly with the important question of visual defects of school children, and was listened to with much interest.

The next paper by Dr. Guy L. Keifer, health officer of Detroit, on milk as a conveyor of disease, was of much interest. He dwelt particularly with the subjects of scarlet fever and diphtheria, and he says that the investigations of his local board had established, with reasonable certainty, the fact that not only was the milk itself and the vessels in which it was distributed dangerous under such conditions, but that the use of soiled milk tickets had given rise to quite a wide spread of epidemic of scarlet fever in Detroit and a neighboring village. The establishment of this fact to the satisfaction of the local board has led to the enactment of a municipal law forbidding the use of milk tickets of any description more than once.

I must at this point, particularly, comment upon the paper of Professor Novy, of the medical department of the University of Michigan, on plague, which paper followed next in order. I have never listened to a more admirable and forceful description of the subject. It was rich in historical information and dwelt with particular emphasis upon the five endemic or epidemic foci of the disease, the existence of which has seemed to be established by epidemiologists. It was in every way a classic address, strong, thoughtful, and carefully worked up in its reasonings. He pointed out the great and dangerous viability of the plague bacilli, and the manner in which, under proper conditions, it might regain its virulence. He dwelt at length upon the present plague situation in Canton, Hongkong, and other points in China, and the recrudescence which has recently occurred in Honolulu; gave a brief history of the plague situation in San Francisco, Cal., and showed the difficulties which had been encountered by the Marine Hospital-Service Commission and the Service itself, in effecting any thoroughly efficient sanitary measures, and drew rather a gloomy picture of the prognosis of the danger to the United States by the condition of affairs in San Francisco. In the interests of science and epidemiology it is to be hoped that the paper of Professor Novy will soon be published as a whole.

Paper No. 4 was passed owing to the absence of the reporter, and the time thus vacant was utilized by your representative in discussing the yellow-fever question, especially in regard to its etiology and transmission, and in detailing the work and proposed labors of the recently established yellow-fever institute. It is a source of pleasure to be able to report to you that my remarks, which were entirely of an impromptu nature, met with a most cordial reception, and there were many expressions of congratulation from prominent men present as to the inevitable advantage which must accrue to the country at large from such investigations as the Marine-Hospital Service has undertaken to perform in this most important work.

The third session was opened on Friday, November 22, 1901, at 9 a. m., with a discussion by Dr. George Dock, on the use of glycerinized vaccine lymph as an agent for vaccination against smallpox. Doctor Dock takes the attitude that glycerinized lymph is not, by any means, a perfect product; that the period of three months which is assigned to its usefulness by most of the manufacturers, is entirely in excess of its real usefulness as evidenced by practical use, and that the undoubted slowness of action as compared with lymph of other forms, makes it a rather weak agent to depend upon in the prevention of the spread of smallpox in times of public exigencies, such as the suppression of an incipient epidemic. Doctor Dock, in addition, deplored the fact that there was not a national control of the production of vaccine, but did not wish it to be understood that he advocated the establishment of a national vaccine laboratory, but simply wished such laboratory to prepare vaccine experimentally in order to establish a standard to which that of private manufacturers could be made to agree.

The paper by Dr. Fred. R. Belknap, member of the State board of health, was a forceful exposition of the dangers which might result to whole communities from the failure to report even suspected cases of the infectious and contagious diseases.

Papers Nos. 3 and 4 of this session presented nothing of general interest, and paper No. 5, on Michigan laws relative to public health, was passed, owing to the unavoidable absence of the reporter.

It again gives me pleasure to state to you that at this time I was invited to address the senior classes of the medical department of the University of Ann Arbor on the subject of the Marine-Hospital Service and its work. I found that it was the habit of certain professors at the university to give an admonitory lecture to the members of the graduating class looking toward their future careers, and I found, with gratification, that in such lectures it was the custom of at least two professors—Novy and Dock—to advise the members of the graduating class to secure entrance into the Marine-Hospital Service rather than into the other two medical services of the Government.

I was accorded time for a half hour's address through the courtesy of Dr. Dock, who expressed to me his opinion of the value of my remarks.

The fourth session was opened at 2 p. m. on Friday, November 22, 1901, but the papers presented had little of general interest, except that by Dr. Victor C. Vaughan, on the subject of toxins and antitoxins. It was a most welcome and happy disposition of this important subject; abstruse to a high degree, but lucidly expounded, and of very great practical value. I trust, too, that this paper will soon be published in full.

After short general discussions, the work of the conference was brought to a close about 5 p. m. on the 22d instant.

I was able to avail myself of a few hours remaining of my stay in Ann Arbor to have conversations with the president and secretary of the Michigan State board of health, with Professors Vaughan and Novy, and others, as to the yellow-fever institute, proposed legislation, and other important topics. It gives me pleasure to be able to state that I found nothing but a spirit of friendliness to the Service, and that a noticeable feature of all the sessions, and of my private conversations, was an entire absence of any harsh or critical remarks leveled at the Marine-Hospital Service. This I regard as a very important index of public feeling in this particular section of the country.

I left Ann Arbor at 10 p. m. on November 22, 1901, and proceeded to Detroit, Mich., to fulfill the second part of my orders to visit the biological laboratory of Parke, Davis & Co., with a view to acquiring information upon recent laboratory fittings and appliances, which will form the subject of a separate report.

Respectfully,

H. D. Geddings,
P. A. Surgeon, M. H. S.

The Surgeon-General Marine-Hospital Service.

Report on Meeting of American Public Health Association.

By P. A. Surg. M. J. Rosenau.

Washington, D. C., *October 14, 1901.*

Sir: I have the honor to make the following report as a result of my detail to the meeting of the American Medical Association held in Buffalo, N. Y., September 16-20, 1901.

I paid particular attention to the sessions of the section on pathology and bacteriology, leaving the administrative matters and questions of general policy in the hands of Surg. R. M. Woodward, who was also present as an official delegate, and whose qualifications in this regard aided us in securing the good results which were obtained.

I had the honor to present a paper before the section above mentioned upon the subject of "The viability of the bacillus pestis," and also to take part in the discussion upon scientific questions with which I happened to be familiar. The keynote of the meeting centered in a paper read by Surg. and Maj. Walter Reed, of the Army, upon the transmission of yellow fever by the mosquito. Major Reed expressed it as his belief that the disinfection of baggage is unnecessary to prevent the spread of this disease. He did not, however, criticise the Service regulations in this regard.

Major Gorgas, chief sanitary officer of the city of Habana, pointed out the fact that there has been a great diminution in the number of cases of yellow fever in that city this season and believes this to be due to and the result of the measures which he has inaugurated looking to the destruction of mosquitoes in and about the city. In the discussion the fact was brought out that mosquitoes are capable of being conveyed in baggage. Reed in his paper admitted that they may be kept in confinement without moisture a period of five days. In our work in the laboratory we have had similar results, and in the presence of moisture we have kept them alive as long as ten days. Even five days is long enough to carry an infected mosquito in the tray of a trunk or in a bandbox from Habana to almost any portion of the infectible region of the United States. This fact seems to be a scientific justification of the time-honored disinfection of baggage, which for so many years has been considered necessary in order to prevent the spread of the disease.

Doctor Suiter, of Herkimer, N. Y., read a very able report upon the advances made during the year in the domain of infectious diseases and transmission of infection. It was a pleasure to hear him quote the work done in the hygienic laboratory of the Marine-Hospital Service upon the viability of the bacillus pestis and upon the observations made to destroy rats by means of Danyz's virus.

Mr. Fuller presented a very able report upon standard methods of water analysis, copies of which have been placed upon the official files and therefore will not be given further notice here.

In conclusion, I have to state that I had the honor to be elected a member of the council of the section of pathology and bacteriology.

Respectfully submitted.

M. J. ROSENAU,
P. A. Surg., M. H. S., Director Hygienic Laboratory.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

REPORT ON MEETING OF NEW YORK STATE ASSOCIATION OF RAILWAY SURGEONS.

By P. A. Surg. M. J. ROSENAU.

WASHINGTON, D. C., *November 19, 1901.*

SIR: Pursuant to Bureau order of the 13th instant, I have the honor to state that I attended the meetings of the New York State Association of Railway Surgeons, which met in the city of New York November 14 and 15, 1901.

This association was organized about ten years ago for the purpose of securing better sanitation of the rolling stock of the railroads in New York State, and for the organization of a sanitary or medical corps upon all trunk lines. The association has grown not only in scope but in its geographical influence, and is now contemplating an enlargement in both directions.

The principal session of interest to the work of the Marine-Hospital Service was held Thursday morning, November 14, and was devoted to a symposium upon the special topic of railway sanitation. Dr. G. P. Conn, division surgeon of the Boston and Maine Railroad, of Concord, N. H., addressed the association upon the general subject of car sanitation. He pointed out that a railway coach is nothing more nor less than a house on wheels, and that the same sanitary principles which apply to the healthfulness and hygiene of any house apply to the railway coach. His paper dealt especially with the difficulties in carrying out the well-known features of modern sanitation to this house on wheels on account of the temporary occupancy of its tenants and the filthy habits of some of them. As far as laws and regulations are concerned, he pointed out the great difficulties which railroads have to encounter in passing through several States, many counties, and numerous municipalities, which may have conflicting requirements in this regard, and which therefore point strongly to the necessity for a central uniform head responsible for all matters of a sanitary nature.

Dr. J. N. Hurty, secretary of the State board of health, Indianapolis, Ind., read a paper upon the transportation of passengers sick with contagious diseases. Doctor Hurty pointed to the fact that cases of smallpox are not allowed to travel on railway trains, and that therefore cases of consumption, typhoid fever, grippe, and other communicable diseases should also be forbidden such privileges.

The next paper was read by myself upon the subject of the necessity of disinfection.

Dr. William H. Park, of the board of health of Greater New York, addressed the meeting on the methods of disinfecting cars, and spoke especially of the advantages of formaldehyde gas for this purpose.

Upon the medical legal features of this question the Hon. L. L. Gilbert, assistant counsel, Pennsylvania Railroad, brought out the fact that railroads are creatures of the law and that the law which creates them can regulate the conditions under which they should operate, and pointed out that there was no general law regarding any definite obligations of a sanitary nature, but that these were more or less fragmentary, depending upon the county, State, or municipality through which the road runs. He also pointed out the fact that no matter what laws are passed it is impossible to avoid personal contact, which he believed to be a fruitful method of conveying infectious diseases from one person to another.

The general discussion was opened by the president reading a letter sent by the Surgeon-General of the Marine-Hospital Service upon the duties and obligations of the Marine-Hospital Service in preventing the spread of contagious or infectious diseases from one State or Territory to another.

The idea contained in this letter upon the practical methods of advancing or improving the sanitation in cars or railroad stations was then taken up in general discussion by many members attending the meeting, all of whom were agreed that it was impossible from a practical standpoint to enforce theoretical restrictive measures or even necessary practical measures of a stringent or prohibitive character, and that progress and improvement can only be accomplished by a gradual education of the people in the principles involved in railway sanitation and the cheerful cooperation of the railway companies in aiding the enforcement and practical application of these principles.

Respectfully submitted. M. J. Rosenau,
P. A. Surg. and Director Hygienic Laboratory, M. H. S.

The Surgeon-General Marine-Hospital Service.

Report on Resolutions Relative to Sanitation of Seaports Adopted by Second International Conference of American States.

By P. A. Surg. M. J. Rosenau.

Marine-Hospital Service,
Hygienic Laboratory, March 14, 1902.

Sir: I have the honor to make the following report upon the sanitary resolutions adopted by the Second International Conference of the American States at the City of Mexico.

In compliance with a request from the American delegation of this conference for a sanitary expert to confer with them upon the subject of quarantine and sanitation, I had the honor, in accordance with orders dated December 3, 1901, to proceed to the City of Mexico for this purpose.

Several projects for improvements in the sanitary condition of the republics of the Western Hemisphere and their seaports and the regulation of quarantine restrictions were presented to the conference; one of these by the Mexican delegation, and another by Surg. Gen. Walter Wyman, of the Marine-Hospital Service.

The resolutions, as finally adopted by the conference, were based almost wholly upon the above-mentioned documents, which are submitted as a portion of this report, and which in reality are an integral portion of the resolutions as finally promulgated.

The great object sought by the conference was to encourage sanitation, with a view of lightening the burdens of quarantine. It was clearly foreseen that under improved and modern sanitary conditions quarantine restrictions could be reduced to a minimum or totally abolished.

In order to promote this very much desired state of affairs, the conference provided for the assembling of a convention of representatives from the health authorities of the various republics, as well as an international sanitary bureau, with permanent headquarters at Washington, to encourage and carry out the measures of the general convention. The conference recommended that all subjects relating to international quarantine and the prevention of the introduction of contagious diseases into a country, as well as the establishment and control of maritime and of international land detention or health stations, be wholly within the control of the national governments.

It was further adopted, in accordance with the recommendations embodied in a paper by Surg. Gen. Walter Wyman, Marine-Hospital Service, that quarantines be established in the ports of each country in order to avoid the hardships inflicted upon pest-ridden ships which have been driven out of some ports on account of the lack of quarantine facilities.

The resolutions adopted by the conference provide for the abolition of prohibitive quarantines upon manufactures and new merchandise, which is a measure which the Marine-Hospital Service has long striven to achieve. The resolutions further provide that each government represented in the conference shall lend every possible aid to the municipal, provincial, and local authorities within their respective limits, cooperating with them in order to secure and maintain efficient and modern sanitary conditions in their respective ports and territories.

One very important section of the resolutions adopted by the conference provides for the early and prompt notification of the appearance and progress within a republic of cholera, yellow fever, bubonic plague, smallpox, or of any other serious pestilential outbreak. This notification is to be made by the respective republics to the diplomatic or consular representatives of the republics represented at the conference stationed within the territory of the republic wherein such an outbreak may occur.

The conference further recommended that it shall be the duty of the sanitary authorities in each port prior to the sailing of a vessel to note on the vessel's bill of health the transmissible diseases which may exist in such port at that time.

Further details of the resolutions as adopted need not be reviewed by this summary.

It was the general opinion that the resolutions upon sanitary and quarantine measures were the most important of the measures discussed by the Second International Conference of the American States at the City of Mexico, and the opinion was freely expressed that the practical enforcement of the spirit of these resolutions would greatly benefit the Western Hemisphere in its sanitary and financial welfare and would have an enormous effect in promoting commerce, intercourse, and friendly relations between the various republics.

Respectfully submitted.

M. J. Rosenau,
P. A. Surg. and Director of the Hygienic Laboratory, M. H. S.

The Surgeon-General Marine-Hospital Service.

[Inclosure.]

PREAMBLE AND TEXT OF THE RESOLUTIONS CONCERNING INTERNATIONAL SANITARY POLICY ADOPTED BY THE SECOND INTERNATIONAL CONFERENCE OF THE AMERICAN STATES, HELD AT MEXICO CITY, MEXICO, 1901-2.

PREAMBLE.

The advance in medical science in America has rendered it necessary that aseptics or sanitation take the place of antiseptics or quarantine. In other words, it is more important to put cities in such sanitary conditions that diseases can not propagate than to be in the necessity of preventing infection by means of quarantine, which hinders traffic and brings obstacles to commerce.

The constant increase of common interests in the American republics renders it necessary for the present conference to adopt methods and make recommendations for the improvement of sanitary conditions, in order to attack contagious diseases, and that the restrictions of quarantine, so injurious to all, be substituted by precautions which may do away with the causes of quarantine itself. In this manner not only its consequences will be avoided, but the precious treasury of human life will also be efficaciously protected. A system of sanitation would free merchant vessels and railroads from the large expenses which they have to incur on account of the inconveniences of quarantine.

Strict quarantines, and sometimes prohibitory, have been adopted whenever contagious diseases have appeared in several ports of the continent, and the losses suffered on that account, as well as the discredit, resulting from the existence of such contagious diseases, cast upon the places where the disease has appeared, exceeds the amount of expenses which the sanitation of those same ports might have required. And the ports of embarkation suffer, not only for such reasons, but the evil is also felt by the producer and the consumer, whose dependence upon each other is so manifest. In an essay published in the Forum for the month of February, 1899, Surgeon-General Wyman, of the Marine-Hospital Service of the United States, dealing with the subject of extirpation of yellow fever in the ports of this hemisphere, said:

"It can scarcely be doubted that the dreadful yellow fever will disappear almost entirely, but something more than this must be done. Even if that great pestilent center called Habana should be purified and freed from the infection of yellow fever, it would remain liable to be infected again by contagion from other ports of Central and South America which are in no better condition; and it is an important question, therefore, to promote whatever may be necessary in order to extirpate yellow fever from the American Continent, without losing sight of the fact that that disease belongs entirely to the Western Hemisphere.

"And it is not a deceitful optimism to believe in the possibility of an international sentiment inducing to consider the existence of yellow fever in a port and its bad sanitary conditions as a shame upon the government on which such port may depend. Each nation ought to be responsible for the conditions of its territory and dependencies contributing toward the propagation of epidemic diseases, to the great risk of other cities with which it intends to maintain friendly commercial relations. With regard to our cities being free from the fever—thanks to sanitation—the Government ought to solicit the cooperation of representatives from each of the other American republics in order to hold a convention, to be composed of hygienists, civil engineers, and financiers, whose work would consist in preparing a treaty prescribing the inspection of ports—the principal focuses of yellow fever—by a committee of representatives from the republics interested. Each of the contracting countries would contract the obligation of putting into practice the precautions recommended by such committee, or any other which would seem most appropriate, according to the opinion of said committee."

Every nation, almost, has adopted the new methods of sanitation, thus obtaining much good, and as a result of those methods progress has been realized by passing from the prohibitory quarantines to sanitary observations and a disinfection so complete that disease germs can not easily be reproduced.

Doctor Liceaga, president of the board of health of the Mexican Republic, refers, in his project of resolutions submitted by the honorable Mexican delegation to the Second Pan-American Conference, to the methods which were so successfully employed in France in 1890 to prevent the invasion of cholera, prevailing at that time in Spain, which methods consisted in the creation of disinfecting autoclaves for the baggage of passengers and of small lazarettoes for persons attacked or suspected to be attacked with the disease, without interrupting communications or disinfecting merchandise.

Much good has been done by the several sanitary conventions held in different places, for they have served as links to facilitate to the nations the most adequate means to obtain the best systems of international sanitation. The two conventions of Rio de Janeiro and Lima were the results of the six congresses which had taken place previously in different countries, and both were modeled on that of Rome, being so very similar that during the debates which took place at the International American Conference of Washington, in 1890, the two were submitted for the approval of the congress indiscriminately. From that time medical science has been able to demonstrate that quarantine can, up to a certain point, be an efficient method to prevent the invasion of contagious diseases, but that it is not a competent method of prevention.

Dr. Francisco Rosas, president of the Sanitary Congress of Lima in 1899, said the following:

"Innumerable occasions have served to scientifically demonstrate that the closing of ports and frontiers does not prevent the invasion of epidemics, but rather that these penetrate and are rapidly propagated in the countries that observe isolation, because in the erroneous idea that they are free from all danger they become careless and do not adopt the proper measures to prevent the progress of the disease."

The unhealthy quarters of our towns and cities are the principal foci of propagation of the diseased germs, but let those quarters be cleaned and disinfected, and those germs will die out. Cleanliness should be the principal care of cities, and in support of this truth Dr. John Billings, an eminent expert, made the following observations several years ago:

"A very considerable portion of the excess of deaths in a city is due to the poverty of the inhabitants of some of its suburbs. In some districts of all the great centers of population are to be found people insufficiently fed and clothed, who live so huddled together that cleanliness, decency, and morality are very difficult, if not impossible, to obtain. In those places are gathered together the idle, the bad-intentioned, and the most corrupt of the district, and there the classes grow, through heredity, indolent and inclined to evil ways. Mixed among them and living under identical conditions are to be found honest and working people who live from hand to mouth, who, if they are ill, have to go to the hospital, and the indigent who are unable to provide for their own support. The death rate in those suburbs is from 50 to 150 per cent greater than that of the better classes of the population; the mean term of life is 10 or 15 per cent less on account of the poverty and misery; a large part of the sick have to be helped by public charity, and a third part of those who die have to be buried at the public expense.

"The problem to improve the sanitary conditions of those suburbs, to prevent the increase of unclean, damp, dark dwellings and the crowding together of neighbors, lessening the burden which weights on the community without impoverishing that town any more or attracting more vagrants and criminals, is one of the most arduous tasks for modern civilization and for municipal governments.

"It is easy to prove to any practical man that the high death rate and the diseases in the city cause heavy expenses to be incurred for the maintenance of hospitals and other benevolent institutions, and it is just as easy to demonstrate that an abundant supply of pure water, the cleanliness of the streets, a good drainage and regulations for the construction of buildings, properly complied with, are the best methods to diminish the death rate and diseases."

Surgeon-General Wyman, treating on the same subject, had said that previous sanitary congresses and conventions have mistaken the cause for the effect by trying to prevent the latter, leaving the former intact. In a paper read before the Third Pan-American Medical Congress of Habana, he said:

"Let me be allowed to compare the methods of quarantine employed until now with the present ones and those which in the future will be used to exterminate epidemic diseases like the yellow fever. Under the ancient regimé, and as soon as the fever appeared in any locality, a strict quarantine was immediately observed for the neighboring or distant localities with which any communication was possible. The newspapers made it known that "Podunk" that surely was well satisfied with its vigilance, had decreed the quarantine for all the world, and its example was followed by other towns in order not to be outdone by "Podunk." And it is not intended to ridicule such precautions, and I only want to state how much better is the method now in use, and which consists in the concentration of the restrictive efforts in the neighborhood of the focus of infection, and how much more prudent those precuations will appear in a future not far distant, when it will be clearly seen that, thanks to them, the towns, on account of their better hygienic conditions, can behold with certain serenity the invasion of the breaking out of any infectious disease."

The disease germs, as well as other animals, require food. The sources of nourishment being done away with, they can not live.

In a report on sanitation and progress, presented in Habana in 1901, Surgeon-General Wyman says:

"Another of the most powerful incentives for sanitation takes root in the prospect of being free from quarantine. It is now time to take into account the necessity to do away with those obstacles to commerce, to cause the detention of vessels, with their valuable cargoes and passengers, in quarantine to cease, on account of any person of those on board having lived in any unclean suburb of a foreign port and who may have brought a contagious disease with him. It is precisely because those diseases generally emanate from too fully populated or unhealthy suburbs why they should claim our consideration by preference.

"It would be worthy of interest to form a conjectural study of the effect that the suppression of unhealthy ways and dwellings of our cities would produce upon the permanence of contagious diseases. The fact that once an epidemic is declared it ravages the better quarter of the cities with the same violence does not bear upon the question, and that in such an emergency cleanliness and sanitation are impotent to attack the disease, and the fact will always remain that in order that those diseases be propagated it is indispensable that they find the proper conditions in the unhealthiness and vitiated atmosphere, and when it is considered that the increase of infection is very easy and natural in the social scale from the lowest to the highest, the direct and personal influence of the well-to-do and more enlightened classes of the community on the condition of the poor and ignorant is more apparent."

The same author, in an article in the Forum of February, 1899, refers to the advantages which would result from the establishment of an international committee to put into practice the recommendations that a Pan-American Convention might make, requesting better conditions of salubrity in the ports of the American Republics, says that "on behalf of this treaty it could be shown how beneficent it would be for each one of the nations that should sign it, thus freeing its commerce from the hardships and onerous restrictions of quarantine. Its results would be of inestimable value and would make an epoch in the matter of salubrity and sanitation, as the improvements in ports and cities to prevent yellow fever would obtain the prevention of the spread of other diseases, giving a considerable impulse to the municipal sanitation in all parts. It will also produce the effect of improving, both commercially and socially, the relations between the great cities of this side of the Atlantic, and one would arrive by the same means to a common and friendly feeling as to the necessity of freeing our ports and cities from an enemy common to all."

The committee, on commencing its labors, carefully studied the project of the Mexican delegation on international sanitary police, preceded by a complete and well-proved study of the question and which tends to establish the fact that the solution of the problem of the prevention of contagion of the principal epidemic diseases has undergone modifications made necessary by the continued advance of science, and for that reason, as well as in view of the wonderful discoveries made during the time elapsed from the First Pan-American Conference, in 1890, until now, it appears indispensable to reconsider the recommendations that were approved on that occasion in order to harmonize them with the requirements of maritime and terrestrial intercommunications and with the progress of science.

The committee considers the foregoing observations as reasonable; but, with a view to reaching immediate results which unquestionably also call for immediate consideration, adhering substantially to the conclusions in the project of the honorable delegation of Mexico, proposes the adoption of the following recommendations, which certainly will powerfully contribute to combat the plagues which have afflicted humanity, decimating it at the same time and always causing restrictions to commercial traffic, obstacles to the passing of passengers and on not few occasions acts of true inhumanity, on account of the fear of infectious diseases and of an insufficient and capricious idea on the way in which they are propagated and on the prophylactic measures to combat them.

The committee is pleased to be able to recognize the efficacious cooperation which it has obtained on the part of Dr. Eduardo Liceaga, president of the superior board of health of the Mexican Republic, as also those of Doctor Wyman, Surgeon-General of the Service of the Marine Hospital of the United States, and of Dr. M. J. Rosenau, passed assistant surgeon and director of the hygienic laboratory of the Service of the Marine Hospital of the United States. It appears proper to state here that the reports presented at former conferences and other works of the eminent Peruvian, Dr. D. Francisco Rosas, have been made use of.

The committee also desires to state that it duly appreciated the responsibility which it contracted in occupying itself on this most important question. Appreciating to their full value the conquests made by the civilized world through the knowledge which it has obtained of the invisible enemies of humanity, and knowing that that knowledge has been obtained at the cost of precious and heroic lives, it considers that it is in the company of the men yet alive or already dead who so valiantly and with such self-denial gave themselves up to such mighty work.

The committee flatters itself with the hope of contributing with its modest effort for the practical and concrete application of the teachings of the masters for the well-being of our continent.

[Inclosure.]

RESOLUTIONS CONCERNING INTERNATIONAL SANITARY POLICY.

The undersigned delegates of the republics represented in the Second International American Conference, duly authorized by their governments, have approved the following resolution:

The Second International American Conference recommends the early adoption by the republics represented therein of the following resolutions:

1. That all measures relating to the subjects of international quarantine, the prevention of the introduction of contagious diseases into a country, and the establishment and control of maritime and of international land detention or health stations shall be wholly within the control of the national governments.

2. That there shall be established in the ports of each country two kinds of detention—(*a*) that for inspection or observation and (*b*) that for disinfection.

3. That prohibitive quarantine on manufactures and merchandise shall be abolished, and that merchandise proceeding from noninfected ports or places, and which passes through infected territory without being detained therein beyond the neces-

sary time of transit, shall not be subject to detention or other sanitary measures beyond that of the inspection which may be considered necessary at its destination, and that such inspection and delay shall not exceed the time absolutely necessary therefor. Further, that this same regulation shall apply equally to international communication by railway, provided that live stock, hides, rags, and immigrants' effects shall be excepted from the above provisions.

4. That the governments represented in this conference shall cooperate with each other and lend every possible aid to the municipal, provincial, and local authorities, within their respective limits, toward securing and maintaining efficient and modern sanitary conditions in all their respective ports and territories, to the end that quarantine restrictions may be reduced to a minimum and finally abolished. Further, that each and all of their respective health organizations shall be instructed to notify promptly the diplomatic or consular representatives of the republics represented in this conference, stationed within their respective territories, of the existence or progress, within their several respective territories, of any of the following diseases: Cholera, yellow fever, bubonic plague, smallpox, and of any other serious pestilential outbreak; and that it shall be made the duty of the sanitary authorities in each port, prior to the sailing of a vessel, to note on the vessel's bill of health the transmissible diseases which may exist in such port at that time.

5. The Second International Conference of the American States further recommends, in the interest of the mutual benefit that would be derived therefrom by each of the American republics, and that they may more readily and effectively cooperate one with the other in all matters appertaining to the subjects mentioned in the above resolutions, that a general convention of representatives of the health organizations of the different American republics shall be called by the governing board of the international union of American republics to meet at Washington, D. C., within one year from the date of the adoption of these resolutions by this conference; that each government represented in this conference shall designate one or more delegates to attend such convention; that authority shall be conferred by each government upon its delegates to enable them to join delegates from the other republics in the conclusion of such sanitary agreements and regulations as in the judgment of said convention may be in the best interests of all the republics represented therein; that voting in said convention shall be by republics, each republic represented therein to have 1 vote; that said convention shall provide for the holding of subsequent sanitary conventions at such regular times and at such places as may be deemed best by the convention; and that it shall designate a permanent executive board of not less than 5 members, who shall hold office until the next subsequent convention, at which time the board shall be appointed, with a chairman to be elected by ballot by the convention; the said executive board to be known as the "international sanitary bureau," with permanent headquarters at Washington, D. C.

6. That in order that the international sanitary bureau thus provided for may render effective service to the different republics represented in the convention, the said republics shall promptly and regularly transmit to said bureau all data of every character relative to the sanitary condition of their respective ports and territories, and furnish said bureau every opportunity and aid for a thorough and careful study and investigation of any outbreaks of pestilential diseases which may occur within the territory of any of the said republics, to the end that said bureau may by those means be enabled to lend its best aid and experience toward the widest possible protection of the public health of each of the said republics and that commerce between said republics may be facilitated.

7. That the salaries and expenses of the delegates to the convention and of the members of the international sanitary bureau herein referred to and recommended shall be paid by their respective governments, but that the office expenses of special investigations it may make, together with those for the translation, publication, and distribution of reports, shall be paid from a special fund to be created by annual appropriations by the republics represented in such conventions, on the same basis now in force between the American republics for the maintenance of the Bureau of the American Republics. Further, that, in the interest of economy, the said Bureau of the American Republics shall be utilized by the conventions herein referred to and by the international sanitary bureau herein recommended, to the fullest extent possible, for the correspondence, accounting, disbursing, and preservation of the records incident to the work comprised within these resolutions.

Made and signed in the City of Mexico, on the twenty-ninth day of the month of January, one thousand nine hundred and two, in three copies, in Spanish, English, and French, respectively, which shall be deposited in the department of foreign relations of the Government of the United States of Mexico, in order that certified copies thereof may be made to transmit them through diplomatic channels to each one of the signatory States.

Fernando E. Gauchalla,
For Bolivia.
Rafael Reyes,
For Colombia.
J. B. Calvo,
For Costa Rica.
Augusto Matte,
Joaq. Walker M,
Emilio Bello C,
For Chile.
Fed. Henriquez i Carvajal,
L. F. Carbo,
Quintin Gutierrez,
For the Dominican Republic.
L. F. Carbo,
For Ecuador.
Francisco A. Reyes,
Baltasar Estupinian,
For El Salvador.
W. I. Buchanan,
Charles M. Pepper,
Volney W. Foster,
For the United States of America.
Francisco Orla,
For Guatemala.
J. N. Leger,
For Hayti.
J. Leonard,
F. Davila,
For Honduras.
G. Raigosa,
Joaquin D. Casasus,
E. Pardo, Jr.,
Jose Lopez Portillo y Rojas,
Pablo Macedo,
F. L. de la Barra,
Alfredo Chavero,
M. Sanchez Marmol,
Rosendo Pineda,
For Mexico.
F. Davila,
For Nicaragua.
Manuel Alvarez Calderon,
Alberto Elmore,
For Peru.
Juan Cuestas,
For Uruguay.

Report on Meeting of the New York Academy of Medicine.

By P. A. Surg. M. J. Rosenau.

The Surgeon-General.

Sir: Complying with Bureau orders of the 24th instant, I have the honor to state that I represented the Service, upon invitation, at a stated meeting of the New York Academy of Medicine held Thursday evening, February 20. I had the honor to address the academy on the subject "Dry points versus glycerinated virus from a bacteriological standpoint."

Other papers were read upon the subject of vaccination and the treatment of smallpox from a sanitary standpoint.

Dr. Huddleston, of the New York board of health, read a very interesting paper upon the subject of "Tetanus and vaccine virus." He pointed out that there is little danger of vaccine virus becoming infected with tetanus, and that even if infected it is necessary to contain a considerable number of the tetanus organisms, or spores, in order to set in the disease in other animals. He found as a result of his experiments that calves are very insusceptible to tetanus, and that tetanus will not develop and grow in glycerinated virus.

The general discussion was participated in by Dr. Frank Foster, of the New York Medical Journal; Dr. Charles L. Dana, Dr. A. Jacobi, and Dr. J. J. Kinyoun, each of whom related his particular experience with various vaccines under particular conditions.

Respectfully,
M. J. ROSENAU,
P. A. Surg. M. H. S. and Director of the Hygienic Laboratory.

REPORT ON FIFTY-THIRD MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

By P. A. Surg. M. J. ROSENAU.

WASHINGTON, *June 28, 1902.*

SIR: In compliance with Bureau orders of June 7, 1902, detailing me to represent the Service at the meeting of the American Medical Association in Saratoga, N. Y., June 10 to 13, I have the honor to make the following report:

Most of my time was devoted to the section on physiology and pathology. This report will therefore be restricted to the work of that section, before which I read a paper upon the "Growth of the tubercle bacillus and organisms resembling the tubercle bacillus upon fruits and vegetables."

My specimens, which formed the text for the above paper, were displayed in the pathological exhibit.

An abstract of the more important papers read at the section meetings follows:

Specimen of normal intestine perforated by a lumbricoid (Louis C. Ager, Bay Ridge, N. Y.).—The specimen was taken from a man 36 years of age, who the week previous had complained of diarrhea; there were signs of a mild peritonitis, which suddenly became worse, and it was supposed that the man was suffering from appendicitis; operation followed. Although perforation was suspected, the man's condition would permit of no further interference. At the necropsy the worm was found to have perforated the bowel about 10 inches above the caput coli.

Discussion: Ward asked if the bowel was normal, as cases had been reported where the worm had perforated a diseased intestine, but as the worm could not coil itself to brace against the side, he did not see how it could possibly develop sufficient force to puncture normal tissue. The worm's skin is rather brittle, and when bent sufficiently will break. The male worm, which the specimen undoubtedly is, has its tail slightly bent, and contains the genital organs; besides, the head is slightly more pointed than the female. Evans stated that in the lower animals, as pigs, these worms are often embedded in the mucosa, but rarely go below this coat. Ward said that this was frequently observed in cases of ankylostoma, uncinaria, and trichocephalus, but lumbricoids normally do not. Ager replied that the bowel was normal, and that it would be a rare instance that this worm should have found an ulcerated spot. Furthermore, cases have been reported where they were discharged from the umbilicus (abscess), and even from the eye duct and external-ear canal.

Points relative to precipitins.—W. A. Evans and A. Gehrmann (Chicago) defined the limits of dilution of blood or dried blood in different solvents, such as normal salt solution, acetic and caustic soda; the latter they thought the best, and the strength was 0.001 per cent. The test was easily carried out in solutions of 1 to 1000, and an evident reaction was still appreciable at 1 to 100,000, which is far beyond the spectroscope. Four methods of keeping the serum were described, but they preferred the one where it is dried in filter paper over sulphuric acid or calcium chlorid; some degeneration was noticed in specimens by other methods. The practical application of these serums and antiserums is to determine the adulteration of cow by horse meat, and this is accomplished by the immunization of rabbits. Certain pigments that might be taken for blood can easily be told.

Report of a case of ankylostomiasis.—Claude A. Smith (Atlanta, Ga.) presented the specimens of ankylostoma from a man and two dogs. He believes that these parasites are commoner than is usually supposed. People who are dirty and careless about their eating, particularly in the Southern States, are liable to this disease. The difficulty is in diagnosis, but the embryos are easily found in the fecal discharges of infected persons. Constipation is usually marked. In the instances where the dogs were affected, thymol failed to cause the worms to be discharged. The man in this case was also affected with a pleuritic abscess, from which he died. Ward questioned the identity of these worms, as several species of ankylostomas are known and some are known not to be pathogenic to man. The term "ankylostoma" means nothing more than bacillus. Smith replied that in his case he had infected a dog with the specimen from the man.

Some rare forms of chronic peritonitis associated with productive fibrosis and hyaline degeneration (A. G. Nichols, Montreal).—The various forms of peritonitis he divides into (1) exudative, (2) exudative and adhesive, and (3) hyperplastic. The last is mainly considered. The characteristic atomic feature is hyperplastic growth of fibrous tissue, with more or less hyaline degeneration, which occurs in two forms, sporadic and diffuse; both have ascites present; both may result from simple or tubercular inflammations, and many cases of sporadic forms discovered at operation and regarded as tuberculous are in reality due to simple infection. These are no doubt the cured cases. All suspected cases—the lungs, lymph glands, etc.—should be carefully examined for primary infection. Cases of simple hyperplastic peritonitis are rare, but are most common from chronic inflammation of abdominal viscera, as the gall bladder, ulceration of the stomach and intestines, etc. Many examples are really affections of several serosæ—"Zuckerguss" of the Germans. Multiple progressive hyaloserositis is a better name for these hyperplasias. He reports a case occurring in a man having the previous history of alcoholism and syphilis.

Discussion: Welch (Baltimore) commended the author upon his classification, and mentioned cases under his observation. These cases have to be studied with great care, and many sections of this hyperplasia have to be made before nests of cancer cells are found. The same condition is found in colloid cancer of the stomach, and sometimes with the bilateral tumors of the ovaries. The etiology is still an open question, but is evidently allied to chronic pachymeningitis and old recurrent hemorrhagic conditions of the pelvis. Le Conte observed a case in which the liver was encased in a capsule that resembled a cocoanut shell, from which the liver could easily be peeled out. Though many cases of this description have been reported, the probability is that they are simply tuberculous forms; the fact is that it is difficult to tell the difference between endothelium and epithelium proliferation.

Clinical and pathologic aspects of rabies.—D. J. McCarthy and M. P. Ravenel (Philadelphia) divided the three stages of rabies into (1) irrelative, (2), febrile, and (3) convulsive. The onset of the disease is from a few days to six weeks. The pathologic evidences of this disease are in the central nervous system and the intravertebral ganglia; the latter is perfectly characteristic, as they occur in no other disease. This conclusion was based upon the examination of 105 animals. The ganglion cells of the cord show a degeneration; the border cells of its capsule wander into the cell itself, while the nucleus becomes indistinct. This change in a suspected animal can be regarded as affirmative of the disease. Ager (Bay Ridge, N. Y.) mentioned a case where a man had been bitten by a dog; he took the Pasteur treatment and some weeks afterward he developed a double facial paralysis, but finally recovered. Moore thought that any number of nervous diseases would show the changes as described. Loeb said that these lesions were frequently observed in other toxin poisonings. Ravenel thought that if these lesions were found with a history of rabies and no peripheral neuritis the diagnosis was absolute. A great fault in many cases was the fact that the animal was killed before these degenerations take place. It is best to allow it to die, and not kill it. Many specimens have been sent to him in alcohol for diagnosis. This can not be accomplished, as the specimens are in this instance ruined. Beeker has performed autopsies upon animals supposed to have rabies, although he found no change that would have happened under other toxins. Le Conte asked how long was it safe to let a suspected animal live, and if there was any suspected pathologic change in chronic cases. Ravenel answered about three days was needed for diagnosis, but it is best to leave the dog die. He knew no records of chronic cases. McCarthy said he could express no opinion upon the case of facial paralysis. As far as these conditions are described, he believed them typical.

Plasmodia phora, the parasite of cancer.—Harvey Gaylord (Buffalo) referred to the observation of others in this field and the effect of this parasite upon plant life, and compared its identity in the vegetable and animal kingdom. In certain plants affected in clubfoot it can be found in its various forms, from spore formation to a protozoon. These organisms undergo changes similar to those found in malaria, and they are found within and without the cell, though this is also true of malaria. Staining of these bodies and their analogy to centrazones were considered. Details were mentioned of experiments where these plasmodia phora introduced under the skin would cause granulomas to develop in animals, and in one instance, when he introduced them from cancer juice into the jugular vein of a dog, it was followed by carcinoma of the liver. The increase in growth of a tumor is due to the irritation of the surrounding cells rather than an infection. Lantern-slide illustrations were given to illustrate the details of these experiments and observations.

Discussion: Welch (Baltimore) said it was impossible to go into sufficient detail in such a short time on such a remarkable theory. He thought that Gaylord was on the right path, but it was too early to judge the correctness of these observations. Tumor growth was too erratic and too ponderous to be explained by theories heretofore advanced. No doubt that there is a resemblance between the plasmodia phora and the bodies found in malignant tumor, but it is hard to conceive why these parasites stop at a definite boundary after affecting so many cells. The experiment upon the dog is remarkable, but more work is needed in this line before it becomes convincing, as it might be one of those chance experiments that so often happens. However, the work may be erroneous or it may be right. In all events it was most commendatory. McFarland thought there was very little to be gained from Gaylord's experiments, as they had all been done by him some ten years previous. Le Conte agrees with the sentiments of Welch. The cytoplasm of malignant tumors needed considerable study, as did this theory before it could be accepted. Like bodies had also been found in hypernephroma and axillary glands.

Respectfully submitted.

M. J. ROSENAU,
P. A. Surg., M. H. S., Director Hygienic Laboratory.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

REPORT ON MEETING OF ASSOCIATION OF MILITARY SURGEONS.

By P. A. Surg. C. P. WERTENBAKER.

NEW ORLEANS, LA., *June 22, 1902.*

SIR. As directed by orders Surgeon-General's Office, May 22, 1902, I attended the meeting of the Association of Military Surgeons of the United States, held at Washington, D. C., June 5, 6, and 7, 1902, as one of the representatives of the Service, and now have the honor to submit the following report:

The Service was represented by Surg. L. L. Williams, Surg. G. T. Vaughan, and myself. As I was able to be in attendance most constantly on the meetings, it was agreed by the Service representatives that I should submit a report of the proceedings of the meeting, to be signed by them, they adding anything that may have escaped my notice, and such remarks as they desire.

This was the eleventh annual meeting of the association. On the evening of June 4 an informal reception was held in the parlors of the New Willard Hotel, which was well attended by such members of the association as had arrived. On the morning of June 5 the first session was held in the National Theatre at 10 o'clock. On the stage were the President of the United States, Secretaries Shaw, Root, Moody, and Secretary to the President Cortelyou, Surgeon-General Sternberg of the Army, Surgeon-General Rixey of the Navy, and Surgeon-General Wyman of the Marine-Hospital Service, Lieut. Col. John Van R. Hoff, U. S. Army, president of the association; Maj. George Henderson, District National Guard; Brig. Gen. Robert A. Blood, Massachusetts National Guard; Maj. James E. Pilcher, U. S. Army (retired), secretary of the association; Commissioner H. B. F. Macfarland, representing the District government; Bishop Henry Y. Satterlee; Dr. Samuel S. Adams, president of the Medical Society of the District of Columbia, and others.

The President of the United States delivered an address of welcome, in the course of which he referred to the Marine-Hospital Service as follows:

"In all our modern life we have found it absolutely indispensable to supplement the work of the individual by the work of individuals gathered into an association. Without this work of the association you can not give the highest expression to individual endeavor, and it would be a great misfortune if the military members of the surgical and medical profession did not take every advantage of their opportunities in the same way that is taken by the members of the medical and surgical professions who are not in the Army, or the Navy, or the Marine-Hospital Service—who are in civilian life outside. I am glad to see you gathered in this association."

Then came addresses of welcome from the Commissioners of the District of Columbia, and Dr. Samuel S. Adams on behalf of the Medical Society of the District of Columbia.

The president of the association, Lieut. Col. J. Van R. Hoff, deputy surgeon-general, U. S. Army, then delivered the president's annual address, taking as his subject "The broader mission of our association." In the course of his remarks Colonel

Hoff advocated the establishment of a military medical school for the training of officers of the Army, Navy, and Marine-Hospital Service. Reference will be made to this subject further on in this report.

There was a large attendance of the members, and there were 250 new members elected. Quite a number of these were officers of the Marine-Hospital Service.

Representatives from foreign governments were present as follows: Col. Richard Exham, medical service, British army; Colonel Niemier, medical service, French army; Colonel Moline, medical service, Mexican army; Lieutenant-Colonel Neilson, medical service, Canadian army; Captain Temora, medical service, Japanese army; Medical Inspector Kimura, Japanese navy; Dr. E. Castelli, representing the Italian army.

I had the pleasure of meeting and talking with these gentlemen. I made a personal arrangement with Captain Temora, of the Japanese army, to furnish him with mounted specimens of the various species of mosquitoes found in Louisiana in exchange for similar specimens of mosquitoes found in Japan, Formosa, and Korea. I also supplied him with copies of the Service publications on smallpox.

Among the papers presented to the association the following are of especial interest to this Service:

"A short account of mosquito work in Habana, Cuba," by Maj. W. C. Gorgas, surgeon, U. S. Army.

"The prophylaxis of certain diseases incident to camps in time of war," by P. A. Surg. H. B. Geddings, U. S. Marine-Hospital Service.

"Quarantine in its relation to military operations," by Surg. A. H. Glennan, U. S. Marine-Hospital Service.

"Some practical suggestions on tropical hygiene," by Maj. H. P. Birmingham, surgeon, U. S. Army.

"The vaccination of Porto Rico," by Maj. Azal Ames, late brigade surgeon, U. S. Volunteers.

"The management of smallpox," by P. A. Surg. C. P. Wertenbaker, U. S. Marine-Hospital Service.

"Public hygiene in Porto Rico," by Captain Lugo-Viña, assistant surgeon Porto Rico Regiment, U. S. Army.

"Experience of the United States Navy with yellow fever on board ship," by Surg. F. W. F. Wieber, U. S. Navy.

(NOTE.—This paper was of especial interest to this Service, as it contains carefully compiled data regarding outbreaks of yellow fever on ships of the U. S. Navy, from records in the Navy Department, dating back many years, and now presented in this form for the first time. This paper will soon be published in the journal of the association.)

"The treatment of yellow fever, past and present," by Dr. James Carroll, U. S. Army, member of the yellow-fever commission.

"Observations on the plague in the Philippines and India," by Maj. C. B. Ewing, surgeon, U. S. Army, late chairman of the board of investigation of tropical diseases in the Philippines.

"Volvulus in its relation to hernia," by Surg. G. T. Vaughan, U. S. Marine-Hospital Service.

"Organic stricture of the urethra," by Surg. H. W. Sawtelle, U. S. Marine-Hospital Service.

"The United States general hospital and sanitarium for pulmonary tuberculosis at Bayard, N. Mex.," by Maj. D. M. Appel, surgeon, U. S. Army.

All of these papers will appear in the journal of the associatton within the next twelve months.

By agreement of the representatives of this Service, I was designated to represent the Service on the nominating committee. This committee placed in nomination the following officers, who were duly elected: President, Surg. Gen. A. R. Blood, Massachusetts; first vice-president, Medical Director J. C. Wise, U. S. Navy; second vice-president, Surg. Gen. Walter Wyman, U. S. Marine-Hospital Service; secretary, Maj. James E. Pilcher, Pennsylvania; treasurer, Lieut. H. A. Arnold, Pennsylvania.

Boston was selected as the next place of meeting, and the time left to the selection of the executive committee.

Among the important matters acted on by the association at this meeting that are of interest to the Service may be mentioned the following:

1. A bill was drawn and presented to the Congress to incorporate the association. It is thought that an act of Congress incorporating the association would give the association a more definite status, and enable it to communicate with the medical departments of foreign nations as a legal body. Favorable action by the Congress is anticipated.

2. The association adopted the following resolution, introduced by P. A. Surg. C. P. Wertenbaker, U. S. Marine-Hospital Service:

"*Resolved*, That it is the sense of this association that a school for the training of military medical officers has become a necessity, and its establishment is recommended."

The chairman was instructed to appoint a committee to investigate the subject, formulate plans, etc., and report at the next meeting of the association.

In further explanation of the above resolution, I beg to state that there has been a growing sentiment among the medical officers of the Army, Navy, and Marine-Hospital Service that there is a necessity for a closer association of the medical officers of these services, and that there is much need for training young medical officers in the details of their work before assigning them to duty. Both the Army and the Navy have such a course of instruction, but as yet the Marine-Hospital Service has confined its instruction to laboratory work.

I discussed the question of the advisability of the establishment of this school with a number of officers, and finding the sentiment favorable to the resolution, it was introduced and passed. At this writing I have not been informed as to the personnel of the committee that is to have this matter in hand, and I doubt if it has yet been named to the president.

While the details of any plan looking to the establishment of such a school will have to be worked out by the committee, the following idea seemed to meet with favorable consideration from those officers with whom I discussed the subject, and these included officers of both the Army and Navy who are connected with the present school system of those services:

1. The school is to be post-graduate, the requirements for entrance to be similar to those for entrance to the services.
2. That the curriculum is to be so arranged that all subjects common to the three services shall be attended by all the students.
3. Students will select the service they desire to enter, and will be given special instruction in the duties and methods of that service.
4. That it is necessary that a student of the school pass an examination before a board of officers of that service, as at present, before being commissioned. (This provision is to conform to existing laws.)
5. Instruction in the school will be given by officers detailed from each of the services for this purpose.

Medical officers of the National Guard, or civilians who desire to take advantage of the course but do not wish to enter either of the national services, may be permitted to attend the school under certain provisions that can be determined later.

The advantages that are supposed to accrue from the establishment of such a school may be indicated as follows:

1. The requirements for each of the services are placed on a common basis, thus drawing the services into closer relations.
2. It establishes a double system of examinations, which, with the knowledge of the individual students gained by personal contact and observation extending over some considerable time, will enable the examiners to more accurately gauge the capabilities of the individual and determine his fitness for the duties of an officer.
3. It gives the candidate for entrance to the corps that instruction in regard to his duties as an officer that at present, so far as this service is concerned, he has to gather as best he can at some of the stations of the Service, and where he absorbs only the methods, good or bad, of the officers associated with him. The course of instruction in the school would be carefully worked out, combining the wisdom and experience of many officers. Thus the young officer would obtain the best methods and ideas of the Service, with a corresponding elevation of his standards and practice, before he was assigned to duty at a station. With a general knowledge of the aims, methods, and traditions of the Service, his practical education as an officer could proceed along well-defined lines, and not be left, as at present, to chance environments.

It is also believed that the association of the students of the school will be of benefit to them all in other directions. The knowledge of the methods, customs, and ideas of the other services thus gained by the student will be of material benefit to him in the discharge of his duties within his own Service.

This commingling of ideas will in time tend to make the services more homogeneous. It is thought that for our own officers a knowledge of the forms and ceremonies of the Army and Navy, and especially the relations of these services to foreign nations and foreign officers, will be of great benefit to our officers serving on foreign details, or otherwise brought into relations with officers of other governments.

A very interesting drill by the Hospital Corps was given at the United States General Hospital, Washington Barracks, on June 5, in the afternoon—the methods of establishing the various field hospitals during and after a battle; the first aid to the injured; transportation of wounded, etc. In the matter of equipment, etc., I noted several things of interest to the Service.

The patients in the hospital were supplied with pajamas instead of nightshirts, as in our Service. I consider the pajamas as distinctly more desirable for hospital patients than the nightshirt. The jacket of the suit opens all the way down the front, closing by buttons, thus permitting it to be put on and taken off without having it pulled over the head, a process that is always troublesome, and frequently impossible. With the night shirt now used by this Service it is often necessary to tear it down the front to get it on; especially is this true with cases of injury to the trunk and upper extremities.

With the open pajama jacket it can be slipped off and on from the rear with but little trouble to the nurse or inconvenience to the patient. The trousers of the pajama suit afford better protection to the legs, are easily put on or taken off, and are more sightly than the long and awkward tails of the nightshirt.

I recommend that the question of the substitution of pajamas for the present nightshirt be considered. The cost of the garments is about the same. The mess equipment, the portable cooking stove and outfit, and the composition and equipment of the medicine chest used by the Army, were matters of interest that may be utilized in the equipment of our camps.

I was impressed with the value to our officers of the knowledge that could be gained by studying the Army method of conducting camps. There are so many little details that could be picked up that would go far to contribute to the successful management of a detention camp. The location and general arrangement of the camp; the location and care of latrines; water supply; cooking and serving meals; methods of the transportation, supply, and issue of food and other supplies; discipline, and many other points, could be learned by daily contact and a study of Army methods.

An opportunity now presents itself whereby our officers can get this information and experience. I understand that there is a camp of regular troops at Chickamauga Park, near Chattanooga, Tenn. I suggest that permission be obtained to detail one or more officers of our Service to this camp for a few weeks to study the Army methods of camps. The officers so detailed could be directed to make a report, showing wherein these methods could be applied with advantage to our Service.

If practicable, I would suggest that these officers should serve on the staff of the commandant of the camp, in order that they may be to all intents and purposes army officers for the time being, so as to thoroughly grasp the entire situation, which could not be so well done in the capacity of a visitor.

I am of the opinion that an order for these officers to report to the Surgeon-General of the Army for special temporary duty, and an arrangement made through him to have them assigned to the staff of the commandant of the camp for the purpose of studying camp methods, would be all that is necessary, and could be easily arranged. The value to the Service of the knowledge thus gained is unquestionable.

Respectfully,

C. P. WERTENBAKER,
P. A. Surg., M. H. S.

The SURGEON-GENERAL, Marine-Hospital Service.

REPORT ON MEETING OF SOUTHERN CALIFORNIA MEDICAL SOCIETY.

BY ASST. SURG. HILL HASTINGS.

LOS ANGELES, CAL., *May 27, 1902.*

SIR: I have the honor to make the following report in obedience to Bureau telegram of May 13 detailing me to represent the Service at the meeting of the Southern California Medical Society at Idyllwild May 22 and 23.

About 65 members, many accompanied by their wives, left Los Angeles May 21 on a special car attached to the Santa Fe train, arriving at Hemet, about 100 miles distant, at noon. After lunch we proceeded by stage to Idyllwild, 19 miles distant. The road was good and the mountain scenery superb. Strawberry Valley was reached by sunset. This is a small mountain valley in the center of which the Idyllwild sanatorium has been built. A fine little stream of water meanders through the valley, the pines grow large, and around on every side are rugged mountain peaks, some of which are snow clad. The altitude of the valley is 5,230 feet. The air is dry; the sky clear and deep blue. It is said that these conditions obtain throughout the year. The weather during the summer is cool and bracing and usually is cold and dry in the winter. Last winter the thermometer registered as low as 13° above zero, and for three weeks the ground was covered with snow to a depth of 12 inches.

The sanatorium was projected by 100 of the prominent physicians of southern California, who purchased 3,000 acres of land, practically all of Strawberry Valley. Without the aid of wealthy men they have built a handsome sanatorium hotel and several dozen attractive cottages. All the buildings, including the cottages, are of native wood and are electric lighted and steam heated throughout. Open fireplaces are provided in each cottage and in the hotel. The best of bathing facilities are provided.

The sanatorium is for tuberculous patients of moderate means. It is believed that in time it will pay expenses. Since its completion ten months ago 85 consumptives have been treated at the sanatorium. A careful clinical history of each case is kept by the resident physician. The use of sputum flasks is enforced, and spitting around the grounds is prohibited. Several varieties of sputum flasks were shown me; among them the "Knopf," the "Cobb-Thomas," and the "Discreet" patterns were the most used, the last named being the most called for. It is an oval, flat flask, similar to a pocket whisky flask, nickel plated, with an opening in the flat side for the expectoration. The flasks were daily cleaned out by an attendant in the following manner: At a special sink each flask is filled with hot water and allowed to soak for a short while before emptying; it is then scalded out and half filled with 5 per cent carbolic solution. No steam sputum sterilizer had been provided, and some little difficulty with the above method of cleaning had been met with.

The rooms are cared for as follows: The floors are bare, except for rugs, and there are no superfluous draperies and hangings. The pillows and mattresses are covered by double layers of linen, as a precaution against the infection of the pillows, etc. No steam disinfecting apparatus had been provided. The rooms, when vacated, are carefully cleaned and fumingated by hanging up sheets wet with formalin (4 ounces of formalin to 1,000 cubic feet of space).

The treatment given the consumptives is largely that of fresh air, for which large porches (some of them glassed in) are provided, and a generous diet. In addition to the three meals a day two lunches are served, one about 11 o'clock a. m. and one at 4 o'clock in the afternoon. At these hours pitchers of good milk, bread and butter, and simple food can always be found prepared in one of the dining rooms, and everyone may help himself.

The society was in session for two days. All the papers were confined to the subject of tuberculosis in its various manifestations. Your representative had been asked by the president of the society to prepare a paper on the prevention of tuberculosis and read a paper on that subject making a plea for the establishment of public sanatoria for the consumptive poor and for more thorough disinfection of the living rooms of consumptives in their homes, boarding houses, and cheap lodging houses. The necessity for the equipment of the municipal health departments with steam disinfecting apparatus was made plain. The disinfection by steam of mattresses, pillows, carpets, thick quilts, etc., used by consumptives, was explained and urged, in addition to the room disinfection usually practiced.

The care of the tuberculous American seamen under the jurisdiction of the United States Marine-Hospital Service was described. Photographs were passed around showing the sputum sterilizer used at the Fort Stanton Sanatorium, the steam disinfecting apparatus used at the national quarantine stations, the formalin autoclave, and views of a national quarantine station and also views of a municipal disinfecting plant (Washington, D. C.).

The paper elicited some discussion. Among the questions asked were: "Could disinfection of railroad tourist cars and Pullman coaches be enforced by the Marine-Hospital Service?" "Is the disinfection of Pullman coaches by formalin practiced at the Pullman headquarters in Chicago, and is such reliable?" "Is the disinfection of the forecastles of ships occupied by consumptives (as described in the paper) enforced?"

At the conclusion of the reading of the paper a resolution was passed thanking the Surgeon-General of the Marine-Hospital Service for detailing an officer of the Service to the meeting. Another resolution was passed requesting that the paper be published by the society in the daily press of Los Angeles. Your representative suggested that, instead, a committee of experienced members of the society be appointed to look into the matter of the prevention of tuberculosis, find out what was being done in the Eastern States, and place its conclusions before the proper legislative bodies of the cities or counties of southern California. A committee of five was appointed. Your representative was elected an honorary member of the society.

Interesting papers concerning the diagnosis and treatment of the various manifestations of tuberculosis were read.

The meeting was both instructive and enjoyable. The opportunity to hear the discussions of men experienced in the difficulties met with in the prevention and treatment of tuberculosis was appreciated.

Your representative is indebted to the president of the society and very many others for many courtesies.

The society adjourned May 24 to meet in Pasadena in December.

I returned to duty May 25.

Respectfully,

HILL HASTINGS,
Assistant Surgeon, M. H. S.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

REPORT ON ANNUAL SESSION OF THE STATE MEDICAL ASSOCIATION OF TEXAS.

By ASST. SURG. C. E. D. LORD.

GALVESTON, TEX., *May 12, 1902.*

SIR: In accordance with Bureau letter of the 21st ultimo, detailing me to represent the Service at the meeting of the State Medical Association of Texas at Dallas, May 6–9, and to report on proceedings of interest to the Service, I attended said meeting, and returned to duty at Galveston May 10.

Two resolutions of interest to the Service were adopted by the State association: (1) Advocating State control of tuberculosis and appropriating $200 to publish literature on the subject, to be distributed throughout the State; (2) advocating formation of State board of health in place of State health officer.

Governor Sayers of Texas was present and spoke, under the second resolution, in favor of a State health board.

Respectfully,

C. E. D. LORD,
Assistant Surgeon, M. H. S.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

OFFICERS DETAILED FOR QUARANTINE DUTY IN HAWAII AND THE PHILIPPINE ISLANDS.

Asst. Surg. W. C. Hobdy was, on June 16, 1902, directed to proceed to Honolulu, Hawaii, and directed to report to medical officer in command for duty.

Asst. Surg. J. M. Holt was, on May 14, 1902, directed to proceed to Honolulu, Hawaii, and report to medical officer in command for duty.

Asst. Surg. F. J. Thornbury was, on March 6, 1902, directed to proceed to Honolulu, Hawaii, and report to the medical officer in command for duty.

Asst. Surg. Dunlop Moore was, on November 14, 1901, directed to proceed to Honolulu, Hawaii, and report to the medical officer in command for duty.

Asst. Surg. J. D. Long was, on July 29, 1901, directed to proceed to Manila, P. I., and report to the chief quarantine officer for duty, and was, on September 28, 1901, assigned to duty at Mariveles quarantine.

Asst. Surg. M. K. Gwyn was, on August 20, 1901, directed to proceed to Manila, P. I., and report to the chief quarantine officer for duty, and was assigned to Iloilo.

ACCOUNTS.

VOUCHERS PASSED FOR PAYMENT AND SETTLEMENT.

The records of the Bureau show that 16,957 vouchers were passed during the year. Of this number, 15,907 were sent to the disbursing clerk for payment, 554 were transmitted to the Auditor for the Treasury Department for examination and settlement, and 1,050 were examined and referred to the Auditor, they having previously been paid by special disbursing agents of the Service.

FINANCIAL STATEMENT.

RECEIPTS AND EXPENDITURES, UNITED STATES MARINE-HOSPITAL SERVICE, FISCAL YEAR ENDING JUNE 30, 1902.

The balance of the marine-hospital fund available at the commencement of the fiscal year was $726,752.74, and the receipts from all sources, $908,435.54. The expenditures were $999,356.77.

Summary, marine-hospital fund.

Balance July 1, 1901		$726, 752. 74
Receipts tonnage tax		858, 190. 89
Repayments, care foreign seamen, etc	$7, 322. 57	
Medical and hospital supplies	42, 922. 08	
		50, 244. 65
Total		1, 635, 188. 28

Expenditures.

Maintenance of stations	$703, 032. 78	
Purveying depot	126, 998. 21	
Fuel, lights, and water	57, 431. 55	
Repairs public buildings	48, 278. 45	
Furniture and repairs	8, 268. 37	
Heating apparatus	19, 247. 41	
Salaries, Surgeon-General's office	36, 100. 00	
		999, 356. 77
Balance July 1, 1902		635, 831. 51

Statement of appropriations, quarantine service, 1902.

Amount of appropriation	$310, 000. 00
Repayments, care foreign seamen, etc	816. 08
Total available	310, 816. 08
Expenditures July 1, 1901, to June 30, 1902	300, 858. 23
Balance July 1, 1902	9, 957. 85

Name of station.	Maintenance of stations, salaries of officers, and miscellaneous.	Medical and hospital supplies.	Total.
Reedy Island	$22, 584. 40	$1, 222. 70	$23, 807. 10
Delaware Breakwater	6, 479. 73	901. 75	7, 381. 48
Cape Charles	15, 218. 98	480. 30	15, 698. 28
Cape Fear	6, 903. 73	304. 20	7, 207. 93
South Atlantic	13, 154. 13	2, 188. 76	15, 342. 89
Brunswick, Ga	5, 462. 88	260. 09	5, 722. 97
Gulf	21, 605. 26	1, 383. 04	22, 988. 30
Key West	4, 570. 40	105. 94	4, 676. 34
Mullet Key	9, 274. 17	493. 11	9, 767. 28
San Diego	8, 680. 86	343. 03	9, 023. 89
San Francisco	48, 184. 96	767. 04	48, 952. 00
Port Townsend	15, 930. 20	249. 11	16, 179. 31
Columbia River	11, 293. 13	30. 12	11, 323. 25
Savannah, Ga	14, 873. 21	1, 573. 18	16, 446. 39
Porto Rico	27, 752. 47	751. 42	28, 503. 89
Hawaii	33, 017. 55	9, 042. 99	42, 060. 54
Miscellaneous, including repairs to vessels, etc	14, 286. 24	1, 490. 15	15, 776. 39
Total	279, 272. 30	21, 586. 93	300, 858. 23

Preventing the spread of epidemic diseases, July 1, 1901, to June 30, 1902.

Balance July 1, 1901		$799,561.81
Expenditures July 1, 1901, to June 30, 1902, viz:		
Foreign medical service, salaries and miscellaneous, China, England, Italy, Germany, and Central America	$35,915.94	
Sanitary inspection in United States, salaries, traveling expenses, and miscellaneous	43,258.18	
Yellow fever, maintenance of detention camps, precaution against outbreak of yellow fever, salaries, supplies, disinfectants, etc., including special investigation of yellow fever, Vera Cruz, Mexico	48,178.02	
Leprosy investigation (act of Congress March 2, 1899), salaries, etc	755.93	
Nome, Alaska, account of smallpox, salaries and miscellaneous	3,484.77	
Texas-border inspection, account of smallpox, salaries and miscellaneous	9,015.21	
Savannah, Ga., account smallpox, temporary attendant	10.00	
Philippine Islands, transportation charges, antiseptic serum, etc	805.79	
Habana, Cuba, salaries, subsistence supplies, etc	4,047.87	
		145,471.71
Balance July 1, 1902		654,090.10

Appropriations, quarantine stations.

Chesapeake Bay Quarantine Station, act March 3, 1893:	
Balance July 1, 1901	$6,935.00
Balance July 1, 1902	6,935.00
Gulf Quarantine Station, act March 3, 1899:	
Balance July 1, 1901	839.06
Expenditures July 1, 1901, to July 1, 1902	14.50
Balance July 1, 1902	824.56
South Atlantic Quarantine Station, act June 4, 1897:	
Balance July 1, 1901	453.02
Balance July 1, 1902	453.02
Astoria, Oreg., Quarantine Station, act July 1, 1898:	
Balance July 1, 1901	43.29
Expenditures July 1, 1901, to July 1, 1902	43.29

Act March 3, 1901.

Reedy Island Quarantine Station		$62,000.00
Expenditures July 1, 1901, to July 1, 1902	$48,692.05	
Transferred to Supervising Architect	12,000.00	
		60,692.05
Balance July 1, 1902		1,307.95

Appropriations transferred to Supervising Architect.

Delaware Breakwater	$2,500.00
Cape Fear	2,000.00
Savannah, Ga	4,500.00
Columbia River	8,500.00

Port Townsend Quarantine Station	40,000.00
Expenditures July 1, 1901, to July 1, 1902 (authorized)	200.00
Balance July 1, 1902	39,800.00

ADMINISTRATIVE DETAILS—CIRCULAR LETTERS.

CIRCULAR LETTER—TELEGRAMS TO BE SENT ONLY WHEN URGENT NECESSITY DEMANDS.

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, D. C., July 18, 1901.

To medical officers of the Marine-Hospital Service:

Telegrams are being received at the Bureau from various officers of this Service upon matters which are not deemed to be of urgent necessity, and should, therefore, be transacted through the mails. The practice of resorting to telegraphic facilities except in cases of urgent necessity must be discontinued at once.

Your attention is called to sections 1 and 2 of Department circular No. 30, 1889, which read as follows:

"I. The telegraph will be used only upon important public business, and in cases of urgent necessity, where the ordinary mail facilities fail to furnish sufficient dispatch. When telegrams are sent upon business that would ordinarily be transacted through the mails, the facts as to their necessity must be satisfactorily shown or they will be disallowed in the settlement of accounts.

"II. All telegrams sent by officers in their own personal interest, or in the interest or behalf of any employee, or by private parties, must be prepaid; and all telegraphic replies to such telegrams will be sent at the expense of the parties sending them."

Telegrams received at the Bureau subsequent to the issuance of this circular, which are deemed to be sent in violation of the provisions of Department circular above referred to, will be returned to the officer sending them, for explanation, and if not satisfactory the sender will be called upon and directed to pay the charges of said message or messages.

WALTER WYMAN,
Surgeon-General M. H. S.

CIRCULAR LETTER RELATIVE TO EMPLOYMENT OF ATTENDANTS.

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, September 27, 1901.

SIR: The following instructions are hereby issued for your information and guidance in regard to the employment of attendants at your station and the manner in which they should be separated from the service.

Under civil-service rules of May 6, 1896, amended to June 1, 1899, the position of hospital attendant in the Marine-Hospital Service is held to be within the classified service, and under section 13, Rule VIII, of the Revised Civil Service Rules and Regulations, a clause is inserted which provides for an emergency appointment. Such an appointment, however, can be made for a period not to exceed thirty days.

When it is desired to fill a vacancy, a letter should be addressed to the Secretary of the Treasury, through the Office of the Surgeon-General Marine-Hospital Service, recommending that the applicant be appointed hospital attendant.

This letter should state the exact name of the applicant, the date from which service should begin, rate of compensation, his age, nativity, of what State a legal resident, and whether he has had any service in the United States Army or Navy. The applicant should be required to fill out and sign Form 276, which form should be inclosed in the letter of nomination.

In this connection, your attention is called to section 1, Rule V, Civil Service Rules, which provides that every applicant must be a citizen of the United States; and also to section 4, Rule V, which provides that all applicants for the position above referred to must be at least 20 years of age.

Upon receipt by the Department of the letter above referred to, making recommendation as to appointment, the Department will make an emergency appointment for a period of thirty days. The attendant should, as soon as practicable, comply with the civil-service rules by qualifying as prescribed by paragraph 64 of the Marine-Hospital Service regulations, by filling out civil service Form 1093. This form should be graded by the officer in charge on the brief fold of said form in the space prepared for the rating of the applicant. The form should then be filed in the office as a part of the station record. If the applicant attains an average of 70 per cent, or more, he is eligible for a probationary appointment of six months. However, before such an appointment can be made the officer should send a transcript of his register of eligibles in duplicate to the Bureau, one copy of which should be addressed to the Civil Service Commission. When this list of eligibles has been forwarded to the Bureau a letter should immediately follow, stating that the services of the attendant have been satisfactory and recommending that he be given an appointment for a probationary period of six months.

In connection with the above, attention is called to paragraphs 64, 65, 66, and 67, of the Marine-Hospital Service regulations.

No dismissal can be made by an officer in charge of a station. The law explicitly states that the power of appointment carries with it the power of dismissal. Therefore, in the case of hospital attendants, the sole power of appointment to and dismissal from the service is vested in the Secretary of the Treasury, whose action is governed entirely by law.

Copy of Department circular No. 141, of November 29, 1899, based upon Executive order of May 29, 1899, which provides that "no dismissal shall be made from the classified service except for cause given in writing," etc., is inclosed for your information.

Respectfully,

WALTER WYMAN,
Surgeon-General M. H. S.

CIRCULAR LETTER RELATIVE TO REPAIR AND PRESERVATION OF MARINE HOSPITALS.

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, October 18, 1901.

To medical officers in charge of United States marine hospitals:

In order that the Bureau may be enabled to keep an accurate account of the amount expended from the marine-hospital fund for items formerly charged to the appropriation for "Repairs and preservation of public buildings" and the appropriation for "Heating apparatus for public buildings," you are directed, in preparing the "Monthly statement of expenditures and liabilities (marine hospitals and relief stations)," Form 1941 1/8, to include under the headings "Repairs and preservation, public buildings and grounds," and "Heating, hoisting, and ventilating apparatus," respectively, the number of and aggregate salaries paid to all attendants, laborers, and mechanics appointed and employed for the exclusive purpose of assisting in any repair work or improvement coming under the above-named heads and payable from the marine-hospital fund.

Attendants, laborers, and mechanics employed exclusively for repair work should not be included in the number of regular hospital attendants noted under the heading "Pay and allowances of officers and employees," nor should their salaries appear under said heading. Care must be taken, however, to enter them as above indicated.

You are further directed to render separate vouchers for all labor and materials properly chargeable to the repair and preservation of the buildings, grounds, and heating apparatus at your station. Requisitions for materials to be used for repairs should not include articles to be used for other purposes.

WALTER WYMAN,
Supervising Surgeon-General M. H. S.

CIRCULAR LETTER RELATIVE TO NOMINATION OF ATTENDANTS.

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, December 11, 1901.

To commissioned and noncommissioned officers of the U. S. Marine-Hospital Service:

In submitting a nomination to the Bureau in the future, where the new appointee is vice a former appointee, a statement should be made as to whether the salary recommended is the same as that paid the former employee.

WALTER WYMAN,
Surgeon-General M. H. S.

CIRCULAR LETTER RELATIVE TO APPLICATION FOR LEAVE BY TELEGRAM.

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, June 27, 1902.

To officers of the Marine-Hospital Service on foreign detail:

You are hereby informed that request for leave of absence is a personal matter, and there is no provision of law or regulation whereby payment of cablegram concerning same can be made by the Government.

Where request is made for leave of absence reply for same should be prepaid, and this fact indicated in the message.

WALTER WYMAN,
Supervising Surgeon-General M. H. S.

MONTHLY STATEMENTS OF EXPENDITURES.

In October, 1901, Form No. 1956 (monthly statement of expenditures) was adopted for use of medical officers at quarantine stations; and in May, 1902, Form No. 1955 (monthly statement of expenditures and liabilities) was prescribed for use of the medical officers at all hospital stations of the Public Health and Marine-Hospital Serviee.

The object of these forms is to enable the officer to make a detailed report under specific heads at the close of the month of the expenditures and liabilities at his station during the month, and, in the case of Form 1956, also the estimated expenses for the ensuing month, and forward the same promptly to the Bureau.

Upon their receipt the expenditures at each station are entered under their appropriate headings and the total amounts noted, which enables the Bureau to keep in close touch with the expenditures at each station and call attention to any unusual increase.

DIVISION OF MARINE HOSPITALS AND RELIEF.

REPORT OF DIVISION OF MARINE HOSPITALS AND RELIEF.

By L. L. Williams,

Assistant Surgeon-General, Public Health and Marine-Hospital Service, in Charge.

RELIEF OF SEAMEN.

During the fiscal year 56,310 patients were treated by the Service. Of these, 12,927 were treated in hospital and 43,383 were treated as out-patients. Three hundred and fifty-six thousand seven hundred and sixty-nine days relief in hospital were furnished, an excess of 9,925 over the number of days' relief furnished during the previous year.

RELIEF STATIONS.

The Service controls and operates 23 hospitals. Of these, 21 are owned by the Government and 2 (New York, N. Y., and Dutch Harbor, Alaska) are leased buildings. There are in addition 120 relief stations where seamen receive hospital and dispensary treatment. Relief stations of the third class have been established during the year at Houghton, Mich., Hoquiam, Wash., and Sheboygan, Wis.

INSPECTION OF STATIONS.

The following relief stations were inspected during the year, and appropriate action on the inspection reports taken by the Bureau: Bangor, Bath, Boothbay Harbor, Ellsworth, Machias, and Rockland, Me.; Cleveland, Ohio; Pittsburg, Pa.; Vicksburg, Miss.; Beaufort and Wilmington, N. C.; Baltimore and Solomons, Md.; Mobile, Ala.; Milwaukee, Manitowoc, Sturgeon Bay, Green Bay, Ashland, and Superior, Wis.; Duluth, Minn.; Sault Ste. Marie, Marquette, Escanaba, and Menominee, Mich.; St. Louis, Mo.; and Fort Stanton, N. Mex.

AID TO OTHER BRANCHES OF THE GOVERNMENT SERVICE.

Aid was extended to other branches of the Government as follows:

Revenue-Cutter Service.—Seven hundred and eighty-eight applicants for enlistment were examined, of whom 145 were rejected.

Steamboat-Inspection Service.—One thousand six hundred and seventy pilots were examined as to visual capacity, and 85 rejected.

Life-Saving Service.—One thousand and forty-four surfmen were examined, and 57 rejected.

Coast and Geodetic Survey.—Nine applicants for enlistment were examined, and 1 rejected.

Light-House Service.—Eighteen applicants for enlistment were examined, and none rejected.

Naval colliers.—Sixteen applicants for enlistment were examined, 2 of whom were rejected.

PHYSICAL EXAMINATIONS OF MERCHANT SEAMEN.

Physical examinations were also made of 276 American merchant seamen, of whom 33 were rejected, and of 25 foreign seamen, of whom 8 were rejected.

SANATORIUM FOR CONSUMPTIVES, FORT STANTON, N. MEX.

(Report of medical officer in command.)

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
OFFICE OF MEDICAL OFFICER IN COMMAND,
Fort Stanton, N. Mex., November 1, 1902.

SIR: I have the honor to submit the following report of the transactions of this sanatorium during the fiscal year ended June 30, 1902, but including a report of the farm, garden, etc., for the entire season:

At the beginning of the fiscal year there were 74 patients under treatment; 138 patients have been admitted during the year and 107 have died or been discharged, leaving 105 remaining at the close of the year.

The following statement will show by classes the number of patients treated during the fiscal year and the results of treatment, viz:

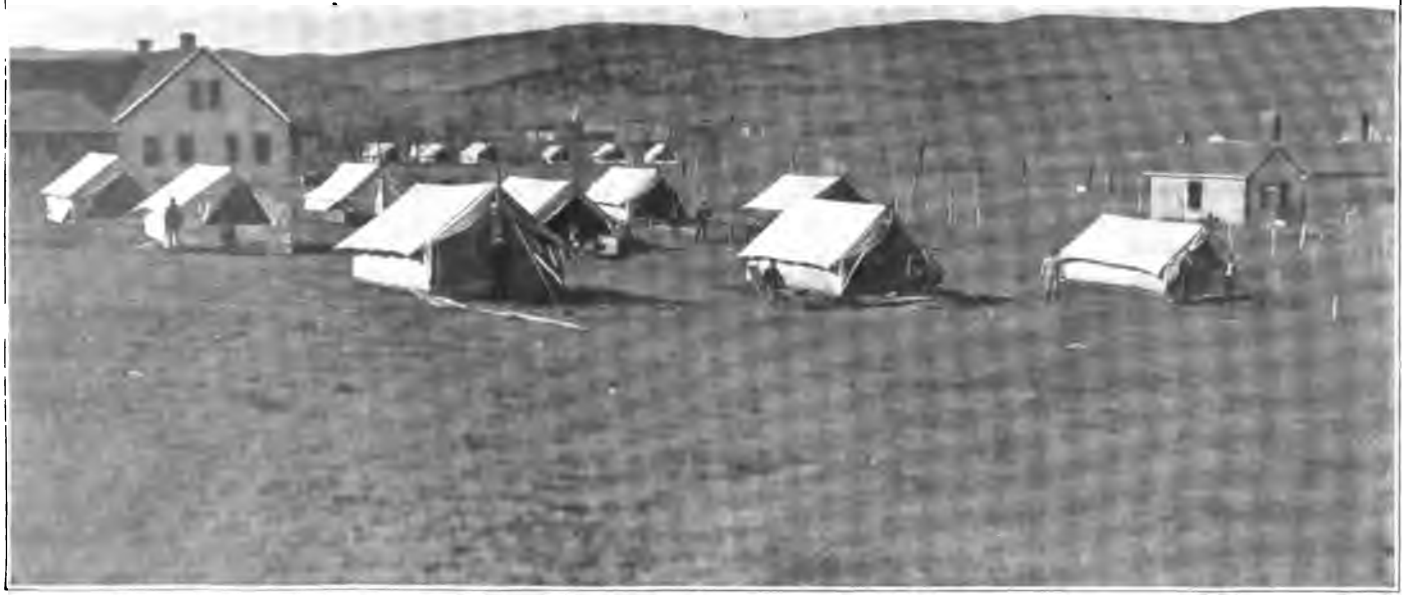
Patients in hospital at beginning of fiscal year		74
First stage	8	
Second stage	60	
Third stage	6	
Patients admitted during the fiscal year		138
First stage	19	
Second stage	106	
Third stage	13	
Total patients to be accounted for		212
First stage	27	
Second stage	166	
Third stage	19	
Discharged during fiscal year		107
First stage—		
Recovered	11	
Improved	4	
Second stage—		
Recovered	9	
Improved	48	
Not improved	4	
Died	16	
Third stage—		
Improved	3	
Died	12	
Remaining in hospital at close of year		105
First stage	12	
Second stage	89	
Third stage	4	

Second and third stages so merge into one another that this classification perhaps shows a smaller number of third-stage patients than were really treated.

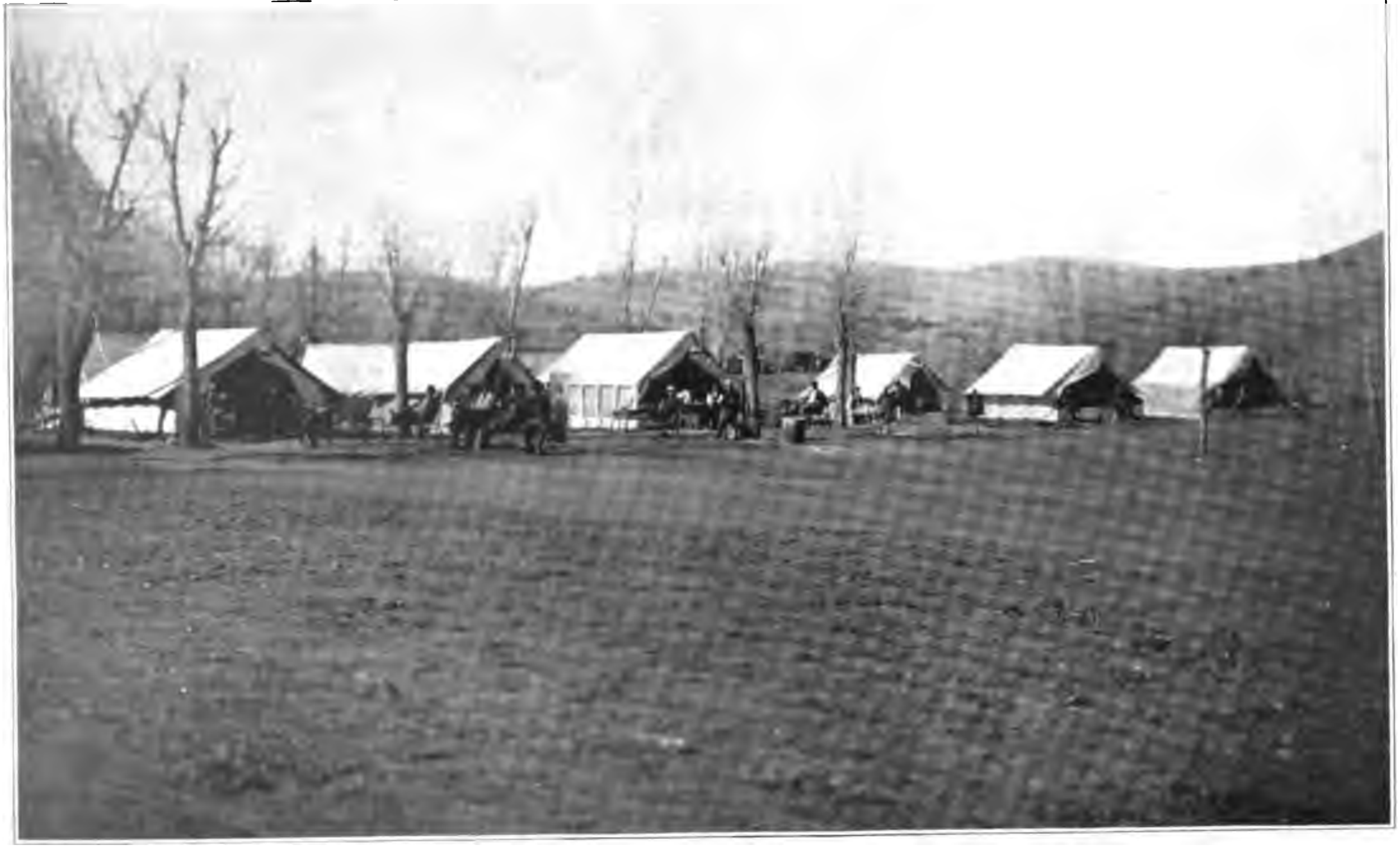
The continued large predominance of advanced cases will be noticed and the excellent results obtained in early cases emphasizes the importance of detecting and transferring to the sanatorium cases of tuberculosis occurring among seamen, while the disease is still in the incipient or first stage, and in order to accomplish this object it is recommended that all marine-hospital offices be fitted out for bacteriological examination of sputum, and that a circular letter of instructions be issued requiring medical officers to make this examination in the cases of all patients applying for treatment on account of coughs of any kind.

In order to give some idea of the magnitude of the work at this station, I will state that there has been a steady increase in the number of patients being treated, and at this date, November 1, 1902, 125 patients are under treatment, not including a number of officers and employees who are tuberculous.

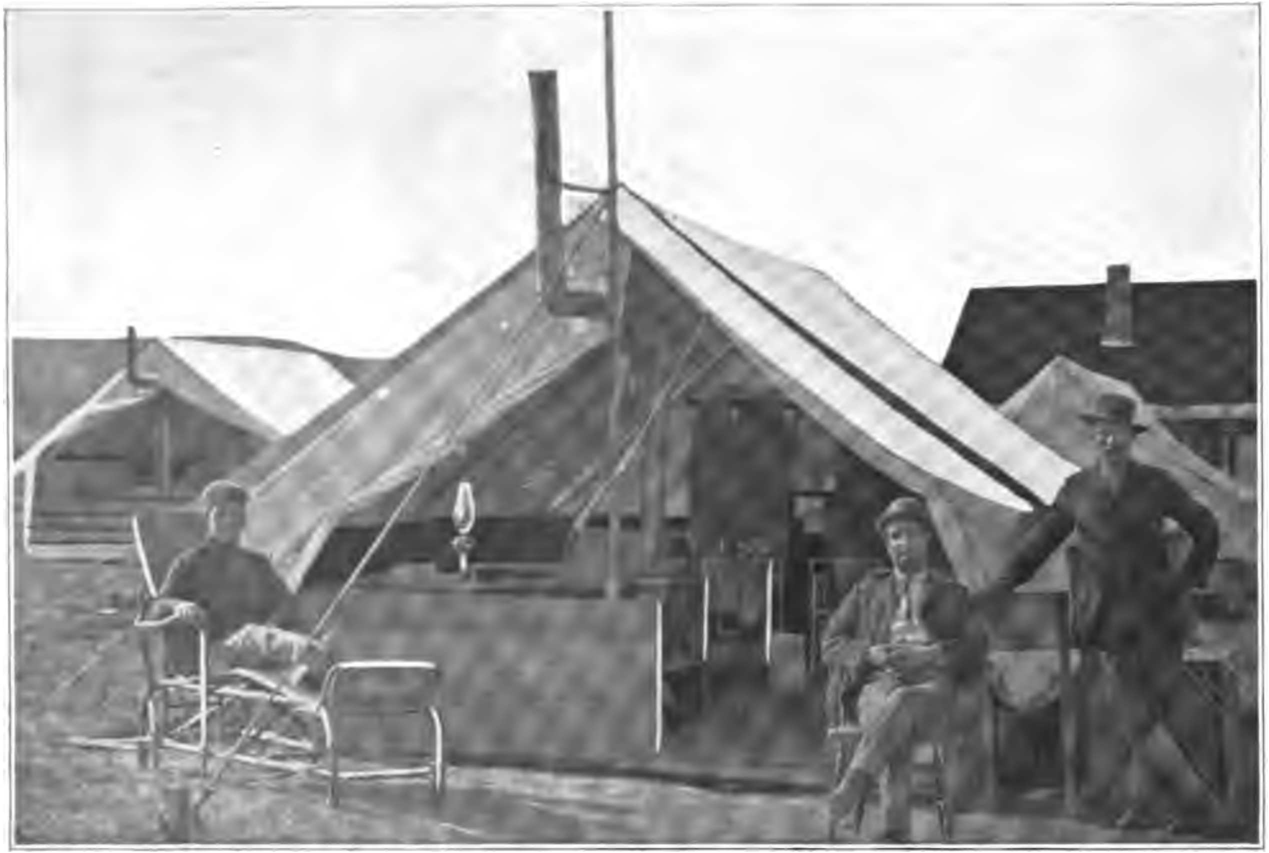
Each patient is, as soon as possible after admission, subjected to a careful physical examination, including an examination of sputum and urine, and recently also of the blood; these examinations are repeated at intervals of two months, all of which involves a large amount of professional work. A nose and throat clinic is maintained for the special treatment of such patients as may require it



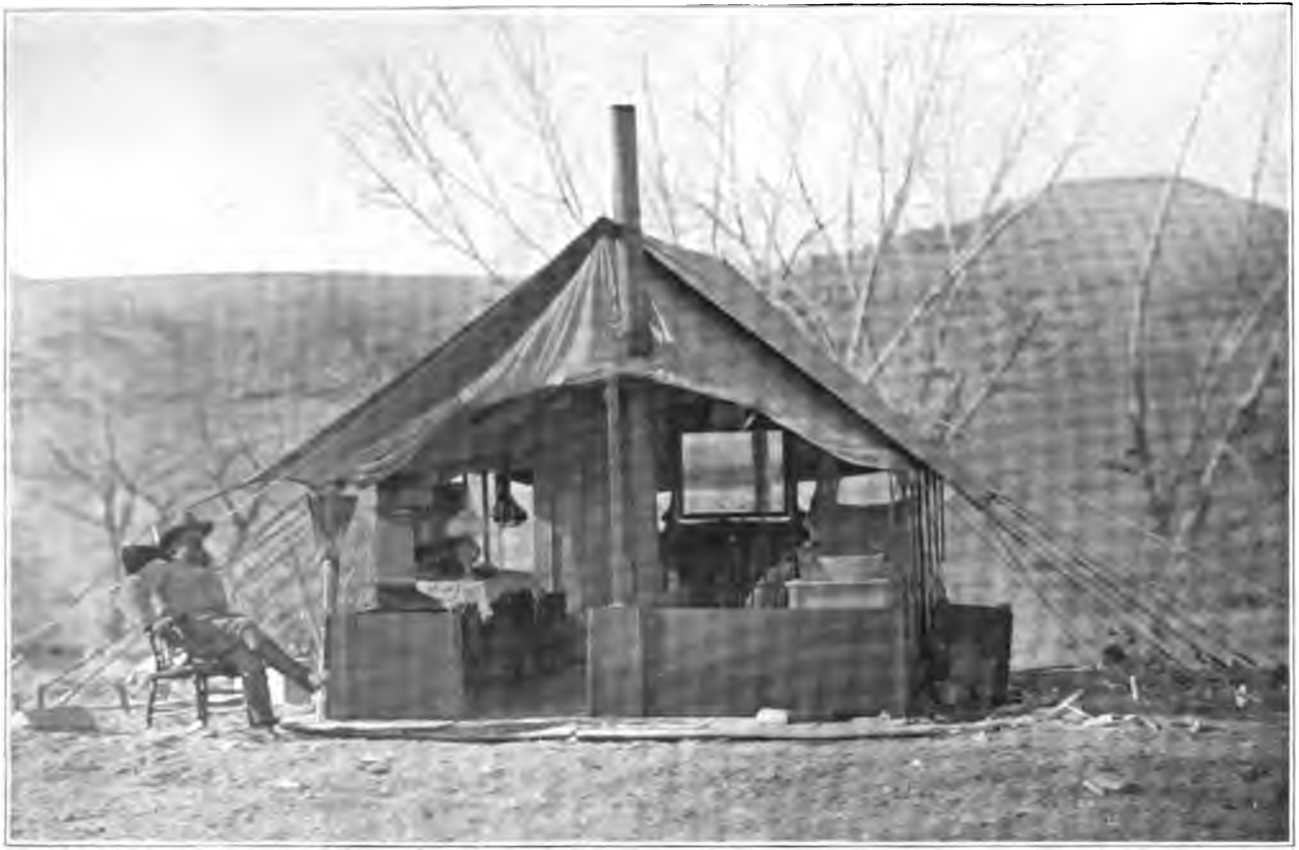
TENT VILLAGE, FORT STANTON SANATORIUM.



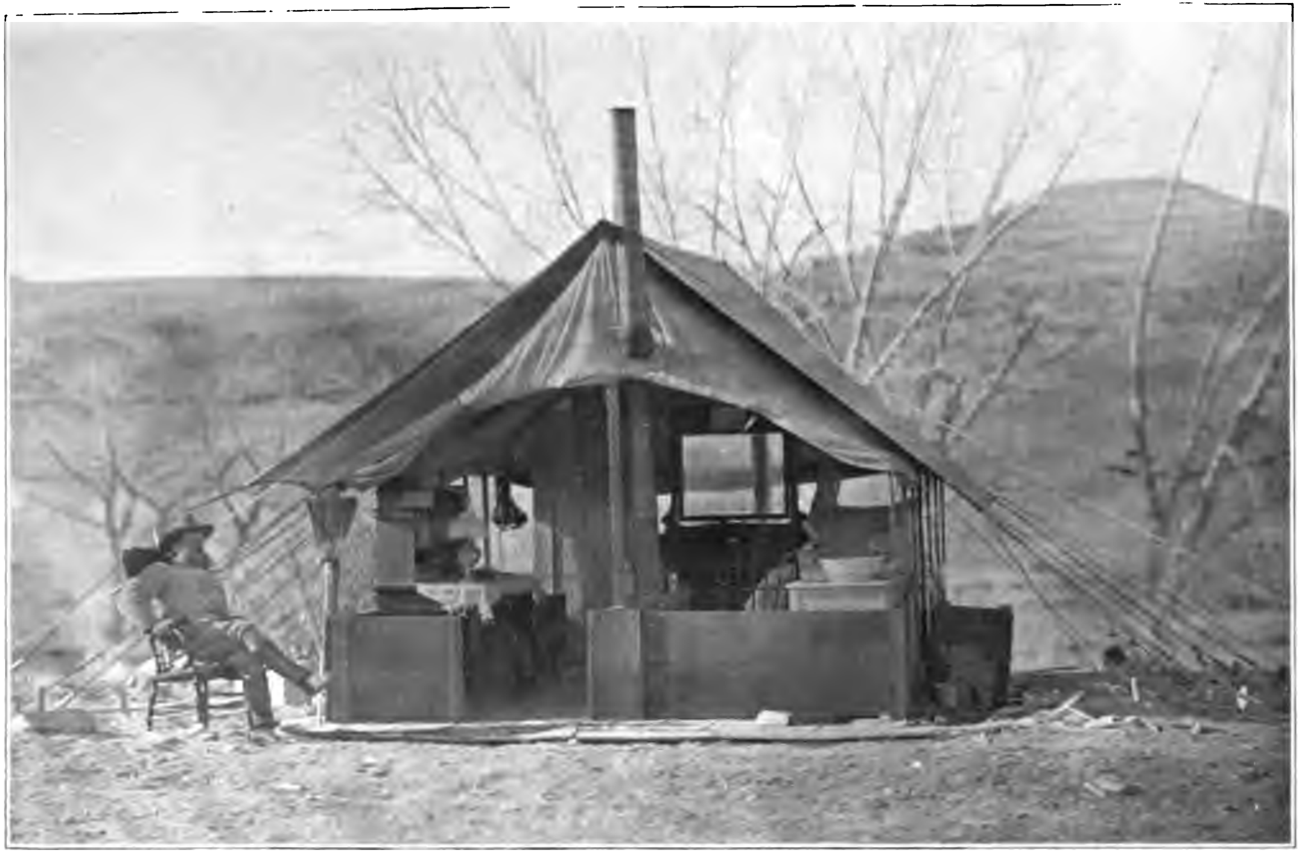
TENTS FOR CONSUMPTIVES, FORT STANTON SANATORIUM.



TENT OCCUPIED BY CONSUMPTIVES, BOXED AND HEATED FOR WINTER, FORT STANTON SANATORIUM.



TENT OCCUPIED BY CONSUMPTIVE MEDICAL OFFICER FORT STANTON SANATORIUM.



TENT OCCUPIED BY CONSUMPTIVE MEDICAL OFFICER FORT STANTON SANATORIUM.

MORNING SICK CALL (AMBULANT CASES); BREATHING EXERCISES, FORT STANTON SANATORIUM.

During the year the total number of days' relief furnished patients was 35,059, and the number of days' rations furnished officers, employees, and day laborers was 18,326. The average daily cost of the ration during the year was 30 cents plus, which, considering the character of this sanatorium and the fact that every patient is on special diet, is considered very low.

The personnel of this station at present consists of 4 medical officers, 2 pharmacists, 1 clerk, and 41 attendants. A few day laborers are employed from time to time as the exigencies of the work require. This number of employees, while seeming large, is really smaller than usual in hospitals of the same capacity, when it is considered that by reason of local conditions we are compelled to have a number of employees not required at ordinary hospitals. These employees are 3 dairymen, 2 gardeners, 2 farmers, 1 plumber, 1 painter, 1 cowboy and fence rider, 1 blacksmith, 2 cartmen, and 1 ditch rider and repairer, making a total of 14 employees required for work which is not performed at ordinary marine hospitals.

A volunteer weather observation has been maintained during the year, and in this connection a summary of the weather observations, so far as kept, may be of interest, and is presented herewith. It is desired to make this a first-class weather reporting station, and I have to recommend that the Weather Bureau be requested to take the necessary steps to this end.

Summary of weather reports at Fort Stanton, N. Mex.

Month.	Temperature.			Precipitation.	Clear days.	Part cloudy.	Cloudy days.	Greatest range of temperature.
	Maximum.	Minimum.	Mean.					
1901.								
July	88	48	69.8	3.12	26	5	0	38
August	88	49	69.5	1.85	23	5	3	37
September	84	38	61.1	2.00	16	12	2	42
October	80	26	59.2	1.76	20	7	4	45
November	67	25	44.5	2.85	21	5	4	38
December	69	1	35.4	.21	25	5	1	42
1902.								
January	68	7	36.6	.05	20	7	4	47
February	72	10	38.5	.38	24	2	2	48
March	66	15	40.5	.22	24	5	2	47
April	82	15	53.2	.00	26	4	0	54
May	85	34	57.8	1.94	23	6	2	44
June	105	40	70.8	.24	29	1	0	49
Total				14.62	277	64	24	
July	95	46	66.7	2.28	16	5	10	43
August	92	49	68.2	1.87	19	8	4	43
September	87	29	60.6	.48	23	5	2	50
October	77	24	51.5	1.81	29	1	1	49
Total				6.44	87	19	17	

GARDEN.

The cost of maintaining the garden, including seeds and labor, has been approximately $600. The products of the garden amounted to 92,735 pounds of vegetables and melons, which, at the very low estimate of 2 cents per pound, are worth $1,854.70, showing a very handsome profit. Surplus garden products have been utilized in the fattening of hogs, and to some extent fed to milk cattle.

The following report will show in detail the garden truck harvested (in pounds):

Asparagus	146	Onions	6,478
Beets	2,742	Parsley	47
Beans, string	265	Parsnips	520
Cabbage	15,725	Pease	161
Cantaloupes	5,275	Potatoes	410
Carrots	370	Radishes	2,455
Cauliflower	1,422	Rhubarb	275
Celery	2,535	Shallots	45
Corn, green	4,090	Squash	160
Corn fodder	4,675	Tomatoes	4,980
Cowpeas	1,615	Turnips	20,239
Endive	315	Turnip tops	320
Lettuce	1,297	Watermelons	15,665
Okra	208		

FARM.

The following farm products have been produced:

Corn, 350 bushels; corn fodder, 16 tons; alfalfa hay, 170 tons; oat hay, 11 tons; pumpkins, 1,000 pounds. The total value of the farm products is about $3,500, and the cost of producing approximately $1,700. The farm has not been so remunerative as was expected, owing to the fact that the past season was the dryest known in twenty years. While the total rainfall for the year was not far below the normal, it was so distributed as to be of little value in the production of crops.

In addition to the foregoing the following station-raised products have been consumed: Pork, 4,980 pounds; lard, 600 pounds; eggs, 493 dozen; milk, 18,500 gallons; butter, 469 pounds; chickens, 750 pounds; and Belgian hares, 4,000 pounds. We also have on hand 150 hogs, of which number about 75 or 100 will be slaughtered during the coming winter; a much larger number of hogs could be raised but for the fact that we have not sufficient food for them.

Our herd of beef cattle, from the original purchase of 206 has increased, notwithstanding some loss, to more than 300—a very satisfactory increase for one year.

This report is not rendered in so much detail as I had hoped to make it, especially in regard to the medical work of the station, but I hope shortly to submit an article for publication by the Bureau dealing more particularly with the professional work of the station. At this writing the capacity of the station is taxed to its utmost, and but for the fact that I have a large number of patients in tents I would be utterly unable to accommodate the present number of patients. The repairs authorized, however, are progressing satisfactorily, and it is expected that before spring we will be able to take care of fully 225 patients. Tent life subjects patients to no hardships; on the contrary, we find that patients residing in tents do better than patients of the same class who are quartered in buildings. I have had all the tents now in use floored and boxed and supplied with small heating stoves, with the intention of keeping patients in them all winter.

Respectfully,

P. M. CARRINGTON,
Surgeon in Command.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

LIMITATION OF SPREAD OF TUBERCULOSIS AMONG SEAMEN.

In order to limit, so far as practicable, the spread of tuberculosis among seamen, officers of the Service have been instructed to disinfect, whenever practicable, the quarters on shipboard which have been occupied by seamen seeking relief on account of pulmonary consumption. It is believed that such infected quarters are responsible for a considerable proportion of cases of this disease occurring among merchant seamen. The forecastles of three vessels have been disinfected up to the close of the fiscal year. The method of disinfection is set forth in the following circular:

[Circular.]

PREVENTION OF TUBERCULOSIS AMONG MERCHANT SEAMEN.

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL, MARINE-HOSPITAL SERVICE,
Washington, D. C., February 11, 1902.

To commissioned officers and acting assistant surgeons, Marine-Hospital Service:

In order to aid in the prevention of the spread of tuberculosis among seamen of the merchant marine, the following rules will be observed whenever practicable:

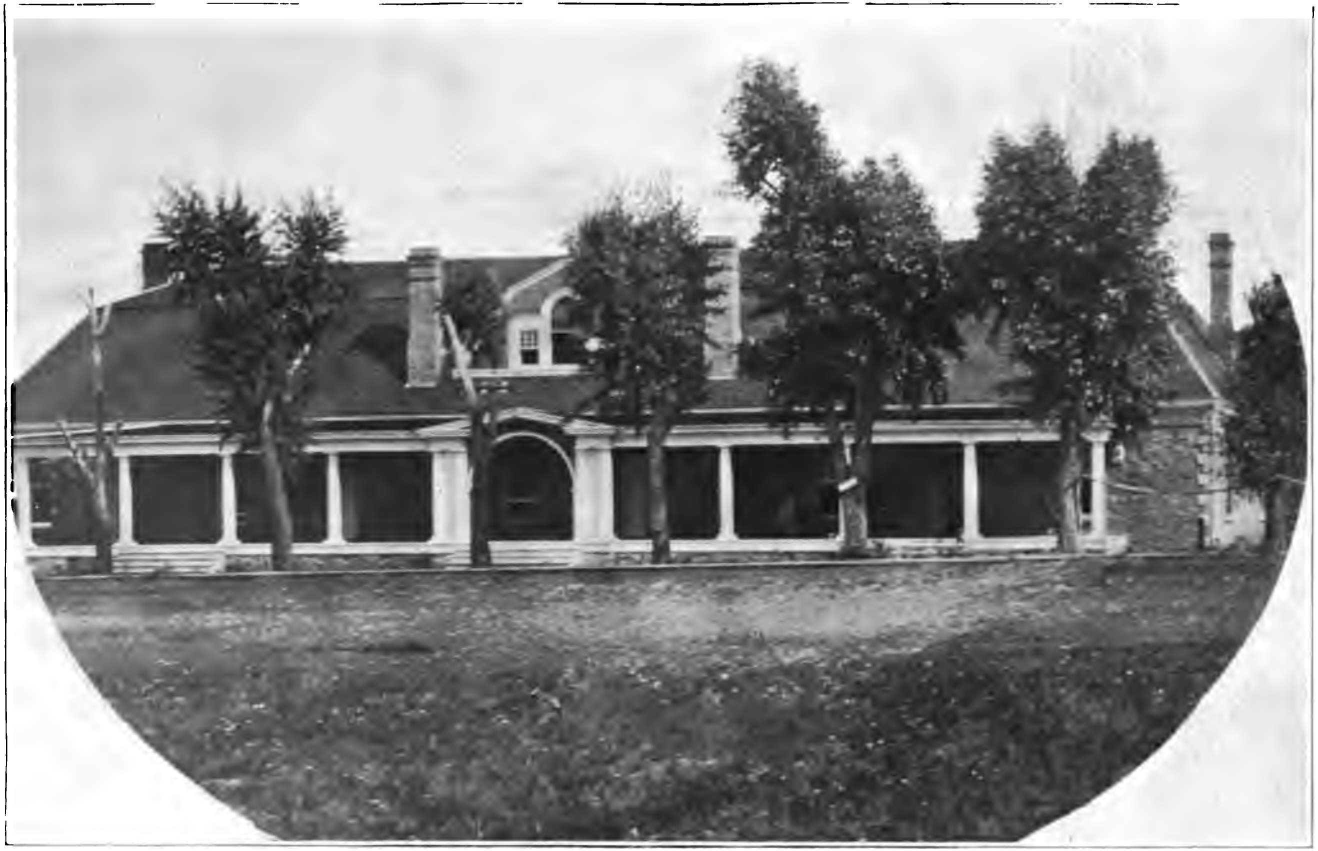
Whenever a seaman suffering with tubercle of the lungs applies for treatment at a relief station of the Service, the medical officer or acting assistant surgeon in charge thereof shall notify the master or accredited agent of the vessel on which said seaman sailed immediately preceding his application for relief, and, if said vessel is in port, shall, with the consent and aid of the master, owner, or agent of the vessel, disinfect the forecastle or other apartment previously occupied by the aforesaid seaman.

The method of disinfection shall be as follows:

1. Thorough mechanical cleansing of floors, walls, and bunks with hot water and concentrated lye.

HAYING SCENE ON THE ALFALFA FARM, FORT STANTON SANATORIUM.

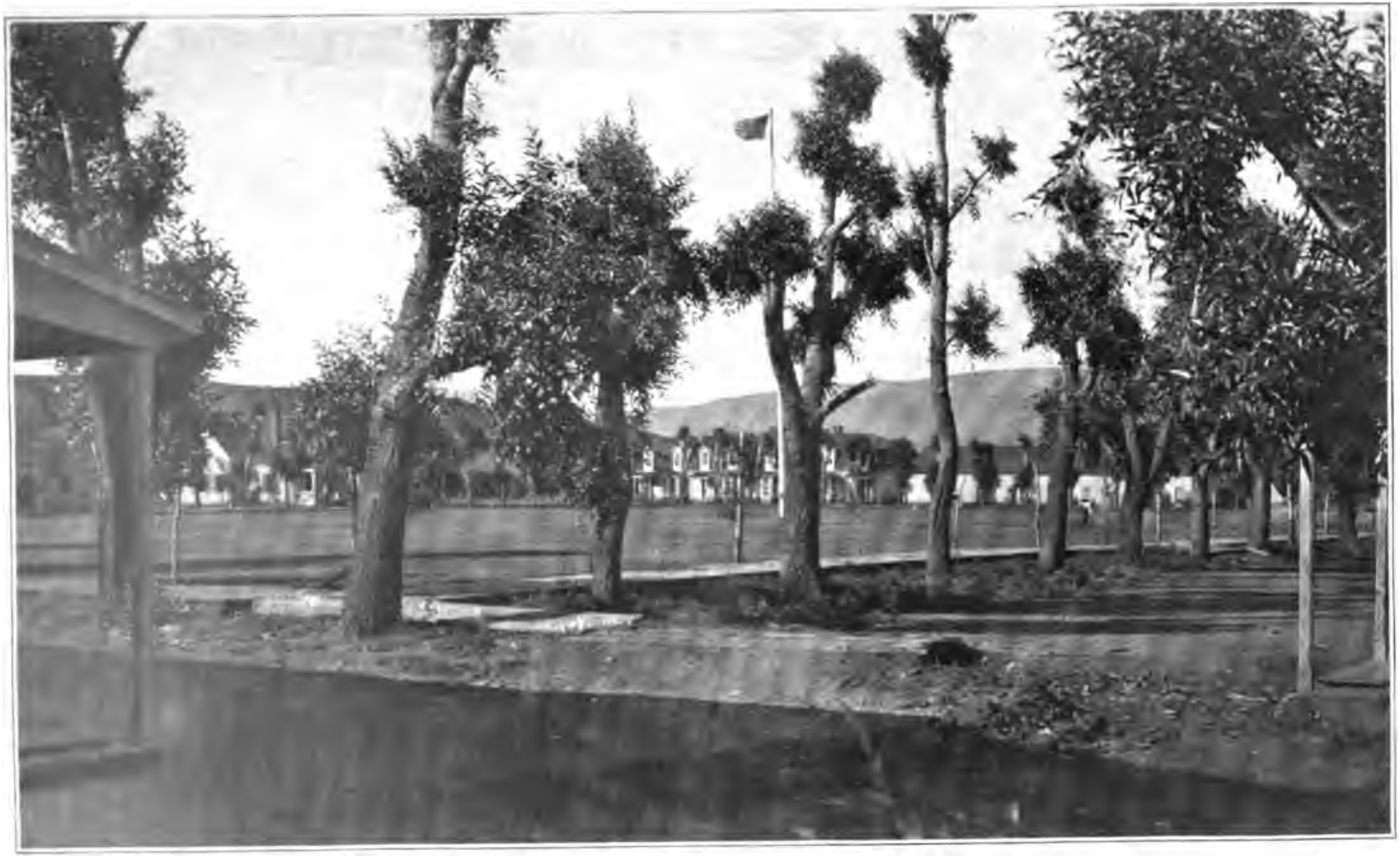
HERD OF BEEF CATTLE. FORT STANTON SANATORIUM.



EXECUTIVE BUILDING AND LABORATORY, FORT STANTON SANATORIUM.

RESIDENCE OF MEDICAL OFFICER COMMANDING, FORT STANTON SANATORIUM.

OFFICERS' QUARTERS, FORT STANTON SANATORIUM.



PARADE GROUND (CAPITAN MOUNTAINS TO THE NORTHEAST), FORT STANTON SANATORIUM.

2. Wetting floors, walls, and bunks with either of the following solutions:

	Parts.
Solution 1—	
Carbolic acid	5
Water	100
Solution 2—	
Corrosive sublimate	1
Hydrochloric acid	2
Water	1,000

Forecastles should be painted or whitewashed after disinfection, when practicable.

Masters, owners, and agents of vessels should be informed of the importance of compliance with the provisions of this circular.

A report shall be rendered to the Bureau of every forecastle disinfected under the provisions of this circular as soon as the disinfection shall have been effected.

You are directed to acknowledge the receipt of this circular.

Walter Wyman,
Supervising Surgeon-General, Marine-Hospital Service.

Approved.
L. M. Shaw, *Secretary of the Treasury.*

PURVEYING DEPOT, NEW YORK.

[Report of medical purveyor.]

Office of Medical Purveyor,
Public Health and Marine-Hospital Service,
New York, N. Y., July 30, 1902.

Sir: I have the honor to transmit herewith a report of the operations of this depot for the fiscal year ended June 30, 1902, accompanied by a financial statement of expenditures which have occurred on account of the various classes of supplies issued to stations.

The total expenditures amount to $112,113.12, of which amount $7,880.28 represents purchases made by this depot as agent for the immigration service, the military governments of the Philippines and island of Cuba, and the yellow-fever institute in field service in Mexico.

The net expenditures of the depot during the past fiscal year are about $25,000 less than the previous fiscal year, notwithstanding the fact that the tonnage of supplies issued exceeds that of the previous fiscal year by 67,261 pounds, indicating greater bulk in each individual requisition.

The largest shrinkage in the classified expenditures is on account of station equipment, being $13,459.50 less than that of the previous year; that of disinfectants, $8,527.34; dry goods, $7,646.03, and bedding $5,278.37.

The only increase of any consequence is that of microscopical and bacteriological supplies, which amount to $4,195.73, or $1,482.41 in excess of the previous year.

The operating expenses of the depot have decreased $657.21 over the previous year, and but $20 has been expended in equipment of same.

The reimbursements to the fund on account of supplies issued to the quarantine, epidemic, immigration and other services aggregate $33,886.26, against $56,624.89 the previous year, a decrease of $22,738.63, the largest part of which is on account of the military government of the island of Cuba, which last year amounted to $13,724.56.

The total net expense for the fiscal year is $96,804.36, which is $24,798.27 less than the previous year.

The office staff remains the same in numbers and personnel as last year, and, in fact, only one change has occurred in the staff since the establishment of the depot.

Respectfully,

Chas. E. Banks,
Surgeon and Medical Purveyor.

The Surgeon-General Public Health and Marine-Hospital Service.

[Inclosure.]

Financial statement, fiscal year 1901-2.

Total cost of orders placed during the year, exclusive of fuel and packing material, which are accounted for under the heading "Operating expenses," viz		$104,232.84
Medical supplies	$21,789.02	
Dry goods, etc	16,600.43	
Surgical appliances, instruments, and aseptic hospital furniture	15,587.09	
Station equipment	15,124.80	
Hospital stores	11,949.89	
Disinfecting apparatus and disinfectants	5,175.98	
Microscopic, bacteriological, and optical apparatus	4,195.73	
Beds and bedding	3,669.85	
Wines and liquors	2,842.01	
Books and journals	1,720.70	
Pharmacal implements, etc	1,251.72	
Rubber goods	1,154.40	
Vials	963.47	
Flags	782.45	
Toilet and wrapping paper	530.00	
Chemical glassware, etc	493.01	
Photographic supplies	224.83	
Electrical and X-ray apparatus	157.46	
Equipment for depot	20.00	
		104,232.84
Operating expenses of depot		9,685.78
		113,918.62
Repayments for period:		
Quarantine service	21,586.93	
Immigration service	7,444.47	
Philippine fund	2,132.65	
Epidemic service	1,525.33	
Coast and Geodetic Survey	1,078.20	
Storekeeper, Treasury Department	118.68	
		33,886.26
Net expenditures chargeable to Public Health and Marine-Hospital Service		80,032.36
Salaries		16,172.00
Commutation		600.00
Total net expense		96,804.36

Number of requisitions filled		662
Consisting of packages	number	7,028
Total weight	pounds	743,586

SUPPLY TABLE.

The supply table of the Service has undergone careful revision during the year with a view to securing uniformity in the equipment of the hospitals and such limitation of expenditure as is consistent with efficient hospital administration.

NEW HOSPITALS.

During the year provision was made by Congress for marine hospitals at the following points:

New York, N. Y., for purchase of present site and building (now occupied under lease), or purchase of a new site and erection of a building	$250,000
Buffalo, N. Y., for purchase of a site and erection of a building	125,000
Pittsburg, Pa., for a site, to be purchased or otherwise acquired, and erection of a building	125,000
Savannah, Ga., for purchase of a site and erection of a building	150,000
Or for erection of a building upon a site owned by the Government	125,000

Appropriation has been made as follows for commencing construction of the hospitals at Buffalo, Pittsburg, and Savannah:

For marine hospital at Buffalo, N. Y.: For purchase of site and commencing construction of hospital under present limit, $60,000.

For marine hospital at Pittsburg, Pa.: For purchase of site and commencing construction of hospital under present limit, $60,000.

For marine hospital at Savannah, Ga.: For commencing construction of hospital under present limit, $50,000.

CARE OF SEAMEN.

The provisions made for the care of seamen for the fiscal year ending June 30, 1903, at all ports where relief is regularly furnished are set forth in Department Circular No. 62, dated June 19, 1902.

MONTHLY STATEMENTS OF EXPENDITURES.

The monthly statements of expenditures (Form 1956), received from all the relief stations of the Service during the year, were duly examined and filed for reference.

REPORTS OF FATAL CASES, WITH NECROPSIES.

REPORTS OF FATAL CASES, WITH NECROPSIES.

INFLAMMATION OF MEMBRANES OF BRAIN.

Localized hæmorrhagic.

R. S.; age, 32 years; nativity, Portugal; admitted to the United States Marine Hospital, San Francisco, Cal., October 9, 1901; died October 16, 1901.

History.—The patient stated that he had been sick three days. He at first had pain in his back, which was followed by pain in his head. He has had no chills, no nausea, no vomiting, no cough or expectoration, but has suffered from attacks of vertigo and frequent sweats. The tongue is small and coated in the middle. There is slight tympanites present over the abdomen and a little tenderness over the liver. Neither the liver nor spleen is enlarged. The lungs are normal, but there is a systolic murmur heard over the apex of the heart. The temperature is 37.4°, respiration 24, pulse 66. He has no appetite, but his bowels are open. Urine: Specific gravity, 1,027; color, dark yellow; no albumen, sugar, nor bile present; urea and chlorides decreased; there is a slight diazzo reaction present. October 11, patient drowsy, complains of headache, bowels constipated, pulse 74, respiration 20, temperature normal early in the morning, but rose to 39° by 11 a. m. There was considerable tympanites, but this disappeared when his bowels were opened. The temperature remained at 39° until the 13th and reached normal again on the afternoon of the 15th. His general condition did not, however, improve, and it became more and more difficult to arouse him. During the afternoon of the 16th his breathing was labored and sterterous, and he died at 11.30 p. m.; his temperature just before death being 38.4°.

Necropsy (11 hours after death).—Height 155 cm.; rigor mortis well marked; palms and soles have a yellowish tinge; body well nourished. There is a scar on the left cheek 6 cm. long. On the back there are a number of petechiæ. The fat in the abdominal wall is of an orange color; the wall is 1.2 cm. thick. The appendix and cæcum are bound down to the abdominal wall by old adhesions. The intestines are of a grayish color, tinged with yellow in the upper part of the abdomen. The dura mater, covering the upper part of the anterior portion of the brain, is much thickened. On incising this portion of the dura about 120 c. c. of thin red fluid, containing small pieces of a fibrinous exudate, escapes. The pia mater is thickened and reddened and covered with a layer of the fibrinous exudate. The membranes covering the rest of the brain and the spinal cord are apparently healthy. The brain weighs 1,450 grams. The front and middle lobes are flattened, but no lesion could be found in the brain tissue. There is a small amount of clear fluid in the pericardial sac. Heart: Weight, 320 grams. The edges of the mitral valve are slightly thickened; the other valves are in good condition. There are no clots in the heart. Left lung: Weight, 400 grams. Right lung: Weight, 780 grams. Both lungs are of a grayish red color, and crepitant throughout. The lower lobes are of a dark-red color, and a red frothy fluid exudes upon section. Spleen: Weight, 120 grams, color black; tissue exceedingly soft and friable. Left kidney: Weight, 200 grams; tissue dark red in color, slightly streaked with yellow. The cortical portion varies from 0.5 cm. to 1 cm. in thickness. Right kidney: Weight, 193 grams. The pathological conditions are similar to those found in the left kidney. The stomach and small intestine are empty; the mucous membrane is not inflamed, and there is no ulceration. The mesenteric and retroperitoneal glands are not enlarged. The femoral glands are slightly enlarged, but there is no evidence of recent inflammation in the glands or the tissue around them. Liver: Weight, 1,650 grams; color, light brown mottled with yellow, this mottled condition extending throughout the whole tissue. A microscopical examination was made of the tissues, and a bacillus was discovered which stained with thionin similar to the plague bacillus, the ends being much more deeply stained than the center of the cell. This bacillus was decolorized when Gram's method was used. Portions of the spleen, liver, and brain were sent to the Marine-Hospital Inspection Service in San Francisco, with the request that a further examination be made. The Commission reported, after several weeks, that cultures had been made and animals inoculated with the tissues, but that the bacillus mentioned above was not the plague bacillus, and that they did not believe that the patient died of plague.

W. G. S.

Paralysis, hemiplegia, osteoma of falx cerebri, organic dementia.

G. B.; age, 40 years; born in Germany; admitted to United States Marine Hospital, Chicago, Ill., September 11, 1900; died October 9, 1901.

Twelve years ago patient was operated upon for mastoiditis. Applied for treatment for right-sided facial paralysis of sudden onset, accompanied by severe frontal headache which prevented sleep. Says he had not slept for eight nights. Lymphatic glands about angle of right jaw and in posterior cervical region enlarged, former compromising mastication. No difficulty in deglutition. Pupils negative. Shortly after admission developed mild catarrhal conjunctivitis. Specific history obtained. About a week after admission stiffness of jaw subsided sufficiently to permit patient to partake of ordinary diet.

Put on potassium iodide, but soon developed iodism. Some improvement under faradism. Later ptosis, lachrymation, and inability to whistle developed.

October 31, 1900.—Awakened at 2 a. m. with severe pain in head; unable to sleep remainder of night. Acme of pain in right parietal region.

November 5, 1900.—After an interruption of two weeks faradism resumed. Case shows very little progress. Blister applied to back of right ear. Features distorted to left. Unable to close right eye.

November 24, 1900.—Partial paralysis noted in left arm and leg. Walks with shuffle of left foot. Left arm hangs almost inert.

November 26, 1900.—Paralysis markedly increased. Says pain in right temporal region was worse than ever last night. Attempts to walk, although cautioned against it.

November 27, 1900.—Attempted to get up and fell on floor last night. Pupils equal; respond to light. Pain has been confined to the right temporal, temporo-facial, and occipital regions. No anæsthesia over paralyzed area. Motor paralysis not complete. Heart and lungs normal. Phenacetine and acetanilide exhibited for cephalalgia with mitigation of symptoms only resulting. Knee jerk diminished, both sides. Cremasteric and abdominal reflexes absent.

December 1, 1900.—Paralysis of arm almost absolute. Pain in head persists. Pulse rate 50, notwithstanding exhibition of strychnine.

December 6, 1900.—Can raise arm from the bed for first time in ten days.

December 13, 1900.—Confusèd and stupid.

December 23, 1900.—Atrophy of left arm noted. Galvanism employed. Difficulty in controlling sphincter ani.

December 26, 1900.—Improvement under galvanism.

January 1, 1901.—Able to walk, but drags left foot.

January 27, 1901.—Pain has entirely disappeared.

February 8, 1901.—Drowsy and dull. Involuntary urination and defication.

February 14, 1901.—Will stand in bathroom and wash his nose for hours if permitted.

February 21, 1901.—Reflexes exaggerated on left side. Features now normal; can whistle and laugh normally.

March 31, 1901.—Can barely walk.

April 12, 1901.—Getting worse; can not walk alone. Heart and lungs normal. Persistently attempts to get out of bed. Restrained.

April 30, 1901.—Tries to walk mostly at night, always falling. Contrary and irritable.

May 7, 1901.—Two large abscesses formed in right thigh; incised, evacuated, and drained. Sleeps most of the time.

June 10, 1901.—No marked change. Progress of disease not rapid.

June 18, 1901.—In last month there has been some loss in degree of muscular control of legs; otherwise he has lost no ground. Organic dementia well established.

July 15, 1901.—Pressure sore over sacrum. While asleep now the right eyelid is completely closed, but upon opening the eyes the right opens first. Left elbow stiff; given passive motion to postpone firm ankylosis and consequent pressure; sore of chest where hand rests.

July 21, 1901.—Small boil on left leg. Incised and drained.

August 10, 1901.—Pressure sore smaller.

September 1, 1901.—Pressure sore entirely healed. Has had no headache for several months.

October 1, 1901.—General condition unchanged.

October 8, 1901.—Sudden change for the worse. Temperature elevated. Respiration increased; beginning pulmonary œdema. Pupils unchanged. Lapsed into unconsciousness before noon, and remained so all day. Stimulation futile.

October 9, 1901.—Died 3.10 a. m., without regaining consciousness.

Necropsy (*ten hours after death*).—The body is that of adult male, apparently 40 years of age. Both legs and left arm somewhat emaciated; body otherwise fairly well nourished. Suggillation of dependent portion of body present. Post-mortem rigidity well established. Head of penis and the scrotum excoriated as result of involuntary urination. Pupils dilated; left slightly larger than right. Stricture in deep urethra. Skull uniformly thickened about 2 cm. throughout. Brain weighs 1,390 grams. An osseous growth not attached to calvarium was found in anterior part of longitudinal fissure firmly attached to the falx cerebri. It is approximately 2½ cm. long, 1½ cm. wide, and 1 cm. through at its thickest portion, which is central. Weight, 2.46 grams. Flat on right side, but irregular on left, an eminence on this side causing a corresponding depression in frontal lobe. Free fluid in lateral ventricles. Some depressions over right temporal and parietal lobes. There is a bony eminence near the center of floor of the middle fossa, right side, projecting about 1 cm. into fossa.

Abdominal fat 2 cm. in thickness. Left lung: Small area posteriorly and inferiorly where the pleura is adherent. Weighs 635 grams. Passive congestion present. Right lung weighs 680 grams. Condition similar to left lung. Pericardium, no adhesions. Heart weighs 345 grams. Left ventricular wall 2½ cm. thick. Right ventricular wall 1 cm. thick. Valves normal. Considerable fatty deposit in heart wall. Liver weighs 1,915 grams. Gall bladder contains bile; no calculi. Liver is normal. Vermiform appendix is about 7 cm. long; normal. Spleen weighs 285 grams; enlarged, otherwise normal. Left kidney, 205 grams. Right kidney, 115 grams. Cortex uneven; very narrow superiorly, otherwise normal in appearance. Urinary bladder empty. All other organs apparently normal.

J. M. H.
H. W. S.

Cerebral apoplexy.

H. H., seaman; age, 25; from Wisconsin; enteredt he marine-hospital division of the Buffalo Hospital of the Sisters of Charity January 14, 1902, and died on the 27th.

Family history.—Mother died of paralysis. He had had the diseases incident to childhood; he was not syphilitic nor addicted to alcohol. A severe attack of influenza three years before and a simple gonorrhea was his recent history.

On January 12, while exerting himself in rowing a yawl, he noticed a dribbling of saliva from his mouth, and found that he could not speak distinctly and that swallowing was difficult. He entered hospital on the 14th. Status presens: Patient speaks very indistinctly; the labials especially are indistinct; he swallows with difficulty and fluids regurgitate through the nares; his tongue deviates toward the right side when protruded; the uvula is deviated to the right; the left levator palati is paretic; the levator anguli oris on the left is paretic; the corner of the mouth is relaxed, and saliva escapes constantly; the left face is markedly paretic, giving a vacant expression of countenance; diagnosis of hemorrhage, involving the deep motor root of his seventh pair of nerves. There was no disturbance of sensation. Treatment: Rest in bed and administration of gelsemium sempervirens. Patient rested comfortably, with slight improvement, until the night of January 23, when upon rising from bed he fell to the floor. When the resident saw him a few moments later there was spasm of left arm and leg, followed by paralysis, and within the hour loss of consciousness. Death resulted on the 27th.

Necropsy (*six hours after death*).—Body of well-nourished young male adult; rigor marked; no external signs of violence or syphilis. Calvarium removed; dura mater normal; vessels of meninges full; vessels of cerebrum injected; lateral ventricles full of semifluid blood; on the right side the rupture seems to have occurred in the substance of the optic thalamus, destroying the adjoining surface of the caudate nucleus; on the left the rupture was more recent, and practically destroyed the same tissues. Deeper section showed extensive destruction of these deep cerebral ganglia from hemorrhage.

E. W.

PARETIC DEMENTIA.

M. S.; white; age, 43 years; nativity, Ireland; admitted to the United States Marine Hospital, New Orleans, La., October 28, 1901, died February 9, 1902.

Family history.—This has no bearing on the case.

Previous history.—Patient states that up to the last year or so his general health has been excellent. Beyond an attack of yellow fever in 1878, he can not remember ever having had a serious sickness. In July, 1900, he was admitted to the United States Marine Hospital, New Orleans, La., suffering from a simple anemia, which was improved under appropriate treatment. About six weeks later he was readmitted, complaining of general weakness and "nervousness." He seemed to improve under treatment, and was discharged after a stay of about ten days, feeling, as he stated, much better. Patient states that he has been much addicted to the use of alcohol in the past, but not in recent years. Had one attack of gonorrhea about twenty years ago; denies ever having had syphilis.

Present history.—Patient states that for the last four or five months he has noticed a difficulty in walking and controlling his movements. He states that on turning suddenly he is apt to fall down. In addition to this he complains of a feeling of general weakness. Apart from this he feels quite well and has a good appetite. The bowels are somewhat constipated.

Physical examination.—Patient is of moderate muscular development and rather undersized. He is neurasthenic in appearance and has a rather vacant facial expression. His speech is rather thick and blurred. He walks with a titubating gait and when requested to turn around quickly staggers and would fall if not prevented. The Argyll-Robertson pupil is present. The patient is able to stand fairly well when both eyes are closed, although there is considerable swaying, but is unable to do so on one leg. The knee jerks are exaggerated, particularly in the left leg, and slight ankle clonus is present in both extremities. In addition there is a slight jaw clonus. The examination of the thorax and abdomen is negative and nothing beyond a mild grade of arterial sclerosis is noted.

The patient was ordered rest in bed, was placed on specific treatment, and given a nutritious diet. Under this treatment he seemed to improve considerably, and, when allowed to get up, a marked improvement in his gait was noticed. This improvement, however, was always followed by a relapse after a variable number of days. On December 10, 1901, it was observed that his speech had become affected so that he could not be easily understood. This seemed to be due to a paretic condition of the muscles of the tongue. On January 5, 1902, a moderate rise of temperature was noticed, with inability to protrude the tongue. On opening his mouth it was seen that the tongue deviated markedly to the right. Two days later the patient was able to protrude the tongue normally and the febrile movement had disappeared. By the 30th of the same month it was evident that the patient was rapidly deteriorating, both mentally and physically. He was becoming very childish, and seemed unable to exercise any control over his bladder, frequently wetting the bed. The following two days were characterized by very boisterous conduct on his part. Considerable difficulty was experienced in restraining him, so that the use of hydrobromate of hyoscine was necessary. In a few days this condition of mental excitability passed away and the patient remained in a semiconscious condition most of the time. He could be aroused, however, in order to take nourishment, and would answer unintelligibly when questioned, but quickly relapsed into his former condition. On the 6th a trophic lesion of the most dependent part of the scrotum was observed. This was cleansed and dressed with iodoform. The bowels, which had been continuously constipated, were kept open by enemata. By the 7th of the month it was evident that the patient could not last much longer. He was now completely comatose, and the pupils, which were contracted, were unresponsive. The pulse, nevertheless, was of good quality and volume. The following day, however, the patient's breathing and pulse became greatly accelerated. In spite of stimulation he failed rapidly and died next day at 6.50 a. m.

Necropsy (four hours after death).—Body of an undersized well-developed man. Height, 160 cm. Weight, about 50 kilograms. Rigor mortis not present. Some postmortem suggillation. Scar of burn, circular in shape, about 6 cm. in diameter, on abdomen in region of umbilicus. On the most dependent part of the scrotum a round superficial ulcer is present, about 2 cm. in diameter, and the scrotum is considerably discolored in its immediate vicinity. The calvarium was now removed. Its thickness seemed to be about normal. The dura mater was intimately adherent to the cranial vault, but there seemed to be no abnormality in the number and disposition of the pacchionian bodies. On incision it was seen that the dura was considerably thickened, but no other change was noticed. No change was noted in connection with the sinuses with the exception that they were smaller than normal.

The pia mater was observed to be much thickened, and its normal translucence was absent almost everywhere. It was opaque and adherent to the cortex in various localities, and at the situations circumscribed by these adhesions it was raised in blebs by the cerebro-spinal fluid. The latter was very much increased above the normal, and upon the removal of the brain at least 200 c. c. were free in the cranial cavity. The brain was now removed and no abnormalities were observed in connection with the cranial nerves. The weight of the brain was 1,480 grams. The convolutions were atrophied, especially in the frontal and parietal regions. On section the brain cut with firmness and the cortex was illy defined. The ventricles were dilated and the ependyma very granular in appearance.

The body was now opened by an incision from the sternal notch to the os pubis. On opening the abdomen the peritoneum was noted to be smooth, but considerably drier than the normal. Stomach: Small and contracted; not visible beneath the free border of the ribs. On section it contained a small amount of greenish mucus. Some dilation of the gastric arterioles was noted. No other abnormalities. Small intestines: Collapsed and empty. No abnormalities were noted. Appendix vermiformis: 8 cm. in length. No adhesions. No abnormalities. Large intestine: Contains a number of scybalæ in upper portion and in the sigmoid flexure. The descending colon is empty. Liver: Weight, 1,300 grams; capsule nonadherent; liver substance firm on section and normal in color. Spleen: Weight 105 grams; capsule nonadherent; splenic pulp normal in both color and consistence. Kidneys: Weight, right kidney, 205 grams; left, 190 grams. Their capsules strip readily. On section some passive congestion is noted. Nothing abnormal noted in connection with the bladder or prostate. Right lung: The pleural cavity contains some 15 c. c. of fluid. The pleural membrane is smooth and glistening, and there are no adhesions. Right lung weighs 370 grams. The upper two lobes crepitate on pressure, but there is some passive congestion of the base. Left lung: Weight, 350 grams. In the same condition as right, with the exception of a few old adhesions at the apex. No further abnormalities were found in connection with it or the corresponding pleural membrane and cavity. Heart: Weight, 310 grams; arrested in systole. Some slight fatty degeneration of the right ventricle noted; otherwise no abnormalities in connection with it or the pericardium, which contains about 10 c. c. of fluid and is smooth and shiny.

Cause of death: Exhaustion supervening on chronic diffuse meningo-encephalitis.

J. W. S.
C. P. W.

ATAXIC PARAPLEGIA—PAROTITIS.

C. S.; age, 64; nativity, Maine; admitted to United States Marine Hospital, Chicago, Ill., December 30, 1901; died February 12, 1902.

Previous history.—Hard chancre twenty-five years ago; typhoid fever twenty years ago; only very moderate indulgence in alcohol; excessive use of tobacco for the last thirty years.

Present illness.—One and one-half years ago noticed that there was a little swelling about both ankles. Under local treatment this disappeared in about three months. At this time there was a slight difficulty in walking, the patient's feet not always going exactly where he intended unless he kept his mind on them. States that this condition was temporary. This has recurred once or twice, but use of legs has never been absolutely normal. About this time there was some pain in abdomen at intervals covering a period of six months. Two months ago difficulty in walking began to increase, but not sufficiently so as to prevent work until December 13. For the last two weeks inability to walk has increased rapidly, and he has lost considerable flesh of late.

Examination.—Pupils unequal; the left somewhat smaller and not responding to light as readily as the right; able to protrude tongue equally well to either side; atrophy of muscles of legs; patella reflex normal in degree, but seems to be somewhat delayed; ankle clonus absent; sensation in legs normal; Romberg's symptom absent; unable to walk without assistance. Heart: Slight systolic murmur transmitted to axilla; apex beat in normal position. Lungs: A few fine râles scattered over both lungs.

January 6.—Mind not as clear as on admission. Unless closely watched at night will try to get out of bed; ataxic condition worse; incontinence of urine occasionally at night.

January 12.—Involuntary movement of bowels last night.

February 1.—Growing steadily weaker; has had two attacks of syncope in the last two days; can not now stand up.

February 5.—Has lost all control over bladder and sphincter ani.

February 8.—Left parotid gland swollen; no pain, but considerable tenderness on pressure.

February 10.—The right parotid gland is now swollen; difficulty in opening the mouth; no pain, but tenderness is extreme; no rise of temperature.

February 11.—Swelling and tenderness somewhat diminished; general condition worse; pulse weaker and respiration more shallow.

February 12.—Death from asthenia occurred at 9.40 p. m.

Necropsy (fourteen hours after death).—Body about 5 feet 10 inches. Rigor mortis marked; post-mortem lividity slight; poorly nourished; both pupils medium in size, with the right slightly larger; small pressure sores over both hips and on inner side of left ankle; both parotid glands apparently about the size of an egg; the right gland contained about 2 c. c. of pus; microscopical examination showed a staphylococcus infection; left pleura shows numerous bands of adhesions and about 40 c. c. of fluid in the cavity; right pleural cavity contains 25 c. c. fluid; no adhesions; pericardium slightly thickened; pericardial cavity contains 15 c. c. of fluid. Heart: Weight, 400 grams; walls of normal thickness, but slightly congested and dark in color; aortic valves competent; one segment of mitral valve somewhat retracted; the other segment contains two small formations of fibrous tissue; tricuspid and pulmonary valves normal; coronary arteries normal; aorta slightly thickened; right lung weighs 875 grams; left weighs 900 grams; both present marked hypostatic congestion; posterior surface of upper lobe of left lung and middle lobe of right show pneumonic patches about 8 cm. by 2½ cm. in diameter. Spleen: Weight, 375 grams; deeply injected and dark in color; left kidney weighs 200 grams; right, 170 grams; both capsules adherent, the cortex thin and pyramids not as distinct as usual; pelvis of both contained considerable fatty tissue. These changes were more pronounced in the left kidney. Brain: Dura mater somewhat thickened. Over the longitudinal sinus about the top of fissure of Sylvius was situated a gumnatous formation nearly corresponding in size to a silver quarter, both in circumference and thickness. There was an unusual amount of fluid in the subarachnoid space and in all the ventricles. Weight of brain, 1,400 grams.

W. C. B.
L. D. F.
H. W. S.

CEREBROSPINAL FEVER.

J. S.; age, 25; nativity, Illinois; admitted to United States Marine Hospital, Chicago, Ill., February 2, 1902; died February 17, 1902.

History.—December 5, 1902, was discharged recovered from United States Marine Hospital, Detroit, Mich., where he had been under treatment for otitis media in right ear. Mastoid opened and a few drops of pus evacuated; wound is entirely healed; no pain on pressure, and patient states that he can hear as well in right as left ear. Thirteen days ago was suddenly seized with a chill, accompanied by a feeling of numbness in the legs and with marked weakness. Since then there has been a chill every afternoon at about the same time, except on the day of admission to hospital. There has been very little headache and less backache. Friday and Saturday last had slight nosebleed; constipation.

Examination.—Face pale and anæmic. Tongue centrally white with beefy edges. Spleen slightly enlarged downward. Abdomen not tender but a little resistent. A papular eruption over legs, chest, and back—in places disappearing on pressure. A few typical rose spots on abdomen and chest. Temperature, 39; pulse, 72; respiration, 22.

February 5.—On the morning after admission temperature dropped to normal and remained there all day. During the early evening a chill occurred and temperature rose to 38.8° C. To-day another chill, at about the same time, when temperature rose to 39.6° C. Quinine was exhibited in 10 grain doses ten hours before, and in 15 grain doses four hours before an expected chill, but without result. Notwithstanding repeated chills patient seems to be in a fairly comfortable condition.

February 7.—Examination of blood yesterday failed to reveal presence of malarial organisms in any form. Another attempt made to-day with like result.

February 8.—Irregular temperature continues—a difference of 4.4° C. occurring in the last twenty-four hours. The pulse-temperature ratio most unusual—pulse giving 80 beats per minute with a temperature of 40.2° C. Serum test fails to show presence of widal reaction. Blood count gives 1 white to 337 red. Urine contains n albumen.

February 10.—Patient very restless yesterday and to-day. Is somewhat weaker than at any time since admission. Complained for the first time this morning of intense headache—mostly in the region of the occiput.

February 11.—Pain has now largely localized in back of neck. Motion of head in any direction extremely painful. Neck very sensitive to pressure. The rash is disappearing. Delirium in a mild form has obtained since last night.

February 12.—Pulse and temperature both subnormal. Pulse going as low as 45—easily compressible. Volume fair. Jactation—picking at bedclothes. Subsultus tendinum. Pupils are equal and respond to light. No deviation nor nystagmus. Pain in back of neck not quite as severe as during the last two days, pressure over that area can not be borne—there is no swelling.

February 14.—General condition growing steadily worse. Patient weaker and delirium now constantly present. There seems to be a very slight tendency to ptosis of right eyelid. Pupils still remain negative.

February 16.—Lumbar puncture. Only about five drops of fluid removed. Semicomatose. Pupils now unequal—the right is a little larger and does not respond as quickly to light as does the left. There is a little internal strabismus. Opisthotonos observed to moderate extent. Paralysis of muscles of deglutition developed this morning.

February 17.—Pulse 90; temperature 38.6 this morning. About 9 a. m. secretions began to accumulate in the lungs and respirations became more and more shallow. This condition grew steadily worse and patient died at 8.40 p. m.

Necropsy.—Body emaciated. Post-mortem rigidity and lividity practically nil. Upon attempted removal of the calvarium it was found that the dura mater was so adherent to the skull that removal in the ordinary way would be impossible without injury to the brain substance. The dura, therefore, was incised by a circular incision following the course of the border of the removed calvarium, and then the falx cerebri was divided. In certain spots, particularly over the superior and midfrontal lobes on both sides, the dura was adherent to the arachnoid membrane. The whole dura was appreciably thickened and intensely inflamed, sufficiently so as to appear actually red in some spots. The entire surface of both hemispheres of the cerebrum presented a deeply inflamed and injected appearance, the arachnoid opia looking glazed and bulging. On the inferior surface of the brain, completely covering the pituitary body, the optic commissure, the tuber cinerium, the corpora albicantia, the inferior surface of the pons and the upper part of the inferior surface of the medulla oblongata, and extending laterally well out onto the inferior surface of the tempero-sphenoidal lobes, and the inferior surface of the cerebellum was a fibrino-purulent membrane quite firmly adherent to the structures mentioned and permitting of removal only after considerable difficulty. On section the inflammatory condition was found to extend throughout the cerebral structure, in places even the white matter presenting a well-marked injection. The lateral ventricles were distended with a sero-purulent fluid containing flocculent particles. The dura surrounding the cervical spinal cord was greatly inflamed, and upon removal the subdural space was found to be filled with a thick purulent fluid. Dissection of the internal ear and mastoid cells on the right side failed to reveal any pathological process.

W. C. B.
L. D. F.
H. W. S.

FRACTURE OF SKULL.

A. C.; age, unknown; nativity, unknown; was admitted to the United States Marine Hospital, Mobile, Ala., October 9, 1901, and died October 11, 1901.

Patient was unconscious when admitted, and no history of previous life could be obtained; his friends stated that he was struck with a piece of timber over the head which rendered him unconscious for a short time, then he regained consciousness to relapse into unconsciousness, in which state he remained. Upon examination a scalp wound over right parietal bone was detected, right eye congested and ball somewhat protruded, right side partially paralyzed, breathing sterterous.

Necropsy (*four hours after death*).—Body that of a well-developed male; age, unknown; rigor mortis well marked; ecchymosis in dependent parts. Body opened by usual incision extending from chin to symphysis pubis; 60 c. c. of fluid in pericardium; heart filled with post-mortem clots; ante-mortem clots in right ventricle; heart weighs 345 grams; valves normal. Posterior part of left lung extremely œdematous, right lung also œdematous in posterior portion; liver much congested, bleeds easily on section, fluid exuding of a chocolate color and consistence; gall bladder distended with bile; left kidney weighs 180 grams; right kidney weighs 175 grams; left kidney much lobulated, capsule peels readily, substance red and congested, and bleeds on section;

right kidney in similar condition; spleen weighs 180 grams, is congested and bleeds on section, substance fairly firm. Beginning at upper part of frontal bone extending into orbit of right side is a linear fracture; also a radiating fracture extending into right temporal bone; horizontal plate of frontal bone on right side is site of stellate fracture which continues through ethmoid, body of sphenoid, and through left wing of sphenoid into temporal; continuing at squamous portion of temporal a zigzag fracture extends through left occipital fissure and up through occipital bone for a distance of 4 inches. At junction of fracture where crossing the left sphenoidal wing and temporal and occipital bones is a comminuted fracture; both orbital plates were fractured, the right into a dozen short pieces admitting the extrance of two fingers; hemorrhage in both orbits. Anterior lobe of brain from before backward was lacerated for 2 inches; brain substance softened and broken down and covered with black blood clot; right meningeal and orbital arteries lacerated; cerebellum much softened and covered with clot with laceration of meninges along site of fracture.

W. P. M.

TUMOR OF THE BRAIN WITH DISEASE OF BONES OF SKULL.

L. T.; age, 25; nativity, Kentucky; admitted to the United States Marine Hospital, Evansville, Ind., May 13, 1901; died November 23, 1901.

The history of this man shows that about five years ago he was injured by a bank of sand falling on him. He was knocked down and struck on the right side of his head; was unconscious for some time, but there was neither fracture of the skull nor laceration of the scalp. Five or six months later facial neuralgia developed on the right side, and he rapidly became a great sufferer.

On admission, though carefully examined and after a consultation with his family physician, no other trouble than severe neuralgia of the fifth nerve of the right side could be detected. His family history was good, and his heart, lungs, and urinary organs were normal. He gave a history of an attack of gonorrhea several years ago, from which he had entirely recovered. Though closely questioned and examined no evidence of syphilis could be found. About a month after admission he had a genuine epileptic convulsion, and from this time until about a month before his death he had these convulsions at irregular periods. Although I had him carefully watched, no symptoms were noted that could assist in locating any brain lesion. About the latter part of June, he complained of not being able to see clearly, and his sight rapidly grew worse, and by August he was totally blind. Ophthalmic examination at the beginning of these symptoms revealed no lesions, and optic neuritis was suspected. Tumor of the brain was diagnosed and every effort made to detect some symptom that would lead to the location of the tumor, but nothing could be detected. About September 1 he began to fail, growing very weak and becoming emaciated, was soon unable to stand up, but there was no paralysis of any of the limbs. Early in October symptoms of glossio-labio-pharyngeal paralysis set in, which rapidly increased, so that before his death it was difficult to feed him. Toward the latter part of October he passed into a semistupor, which gradually increased until his death.

Necropsy (twelve hours after death).—Rigor mortis well marked and the body very much emaciated. The skull was exceedingly thin, averaging less than an eighth of an inch thick. The outer table was smooth and showed no evidence of disease, but the inner table was covered with rough nodules, especially marked anteriorly. The dura was roughened in spots, and covered with patches of inflammatory exudate, and the pia on the convexity of brain was also involved to some extent in the same inflammatory process. The base of the skull was covered with rough nodules, with spots of bone here and there denuded of periosteum. The right lesser wing of the sphenoid and the crista galli of the ethmoid were entirely absorbed, and the bone surrounding the optic foramina was very much diseased. A cyst about the size of a goose egg, containing three or four ounces of a straw-colored fluid, was found in the right anterior cerebral lobe. The wall of this cyst was covered with a slimy gelatinous material. The entire brain was œdematous. The other organs were apparently normal.

B. W. B.

FRACTURE OF SIXTH CERVICAL VERTEBRA.

Lacerated wound of scalp—contusions of shoulder and arm—hemorrhage into the cord.

F. A.; white; age, 32; nativity, Ireland; admitted to United States Marine Hospital, Chicago, Ill., at 5.15 p. m., October 24; died at 10.30 a. m., October 26, 1901.

Patient brought to hospital in police ambulance, with the statement that while he was assisting at the gang plank, for some unknown reason the plank slipped, striking him on the back of the head and shoulders. Estimated weight of plank 500 pounds. The blow rendered patient unconscious, but he partially recovered in a few minutes and was brought to hospital in a dazed condition. From the nature of the blow it is probable that the head was driven violently forward, producing extreme flexion of the spinal column. Physical examination: A lacerated wound of scalp, about 20 cm. in length, extending from a point corresponding to the left parietal foramina backward, downward, and toward the right. The pupils were normal in size and reacted to light; the left, however, was very slightly larger than the right. There was no facial paralysis, and although dazed, enunciation was not impaired. From the level of the second rib downward there was complete motor and sensory paralysis. Patient complained of pain in both shoulders and a burning sensation over the outer part of trapezius muscle on both sides. Patient exhibited a well-marked priapism. All reflexes, except pupil, lost. Pulse 43, weak and compressible. Temperature 36.7. Respiration quiet, full, and regular at 16 per minute. The head was shaved, the wound cleansed, mechanically and with solution of bichloride of mercury 1–2,500, the edges approximated and five sutures inserted. Strychnine sulphate 0.003 and whisky 5 c. c. subcutaneously, together with external heat. At 10 o'clock in the evening of day of admission temperature was normal, pulse had risen to 50 and was strong, there was very little pain, except in shoulders, and patient was entirely rational. The catheter was passed and 120 c. c. of urine obtained; this upon examination was negative. Priapism still exists.

October 25.—Slept about four hours last night. Still complains of severe pain in both shoulders. Motor paralysis has improved to the extent of allowing movement of both hands and arms, but there is loss of muscular sense. Morning pulse 50, strong and full. Respiration 18, free and easy. Temperature 37° C. Toward evening the sensory paralysis had improved so as to admit of the recognizing of pin pricks as low as the fifth rib. Evening temperature 38.8°. Pulse 64. Amount of urine during the day, by catheterization, was about half the normal quantity.

October 26.—About 7 o'clock in the morning patient, still perfectly rational, began to complain of a feeling of strangulation. Examination showed moderate degree of œdema of lungs. Trachea contains considerable mucus. Patient is unable to cough or in anyway relieve himself of the accumulation. Cyanosis noticeable. Secretions extremely thick and tenacious. Decubitus changed from dorsal to lateral without effect. Efforts were made to remove some of the fluid in upper parts of trachea by sponging. Sulphate of atropia 0.001 gram. Pulse 78, but weak and shaky. Temperature 38.4° C. From this time on patient's condition grew gradually worse and death occurred at 10.30.

Necropsy (*five hours after death*).—Body that of an unusually developed and muscular man of 5 feet 9 inches height. Post-mortem rigidity in lower limbs slight, in upper limbs absent. Post-mortem lividity slight. Pupils slightly dilated but of equal size. External wound in good apposition and no signs of pus. Joining the recent wound at right angles and at its lower third is the scar of an old scalp wound. Scalp incision over vertex is followed by no unusual effusion of blood. Outer table of skull presents no evidence of fracture. On removal of the calvarium, which was unusually thin, there was demonstrated to be absolutely no fracture of the inner table. Considerable venous blood effused upon removal of the skull cap. Dura mater not abnormally injected but rather thick and tough. Venous engorgement of vessels of the cerebrum marked. No effusion of blood or serum into the ventricles. On the inferior surface of the cerebellum, almost in the median line but a trifle to the right, and pressing onto the medulla, was a small clot of blood about 1 cm. in diameter. Brain weighs 1,310 grams. Choroid plexus markedly injected. The posterior root of the transverse process of the sixth cervical vertebra was fractured transversely through its entire extent. Upon removal of the spinous processes of the vertebræ a subdural extravasation of blood into the cord was found extending from the second cervical to the sixth dorsal vertebra. Other organs were apparently normal.

W. C. B.
H. W. S.

POSTERIOR CURVATURE OF SPINE.

Lumbar psoas abscess. Angular curvature—Exhaustion.

A. J. S.; age, 41 years; nativity, Sweden; was admitted to the United States Marine Hospital, San Francisco, Cal., April 15, 1899, and died July 3, 1901.

History.—Second time in hospital; gave history of primary syphilitic sore one hundred days previous to admission. No history of secondaries. Complained of pains in head and along spinal column. Could not bend spine. On February 7, 1900, a fluctuating tumor noted in lumbar regiòn of spine. Extends around right side to Poupart's ligament. Tenderness around anterior superior spine. Lungs normal. Heart normal. February 10, multiple incisions made anteriorily and a large abscess cavity cleaned and packed. Discharge continued and on February 17 a counter opening was made in right thigh. Discharge still continued, and sinuses were curetted. March 28, developed extensive œdema of scrotum. April 16, a painful swelling developed on left side of twelfth dorsal vertebra of spine which disappeared when anterior incisions were reopened. Had severe pains in lumbar region of spine. May 12, patient can not walk on account of weakness of his spine. May 14, patient passed blood from rectum. Had lost considerable weight. Patient began to have severe pains in lumbar region on both sides, and on June 6 abscesses in each inguinal region were opened near site of old wound. Large amount of pus escaped and wounds continued discharging for some time. Feet, ankles, hands, and wrists became swollen. Wounds in groin refused to heal, and September 6 counter opening was made for drainage on left side. Patient continued in same condition, with sinuses discharging, until June 6, 1901, when he began to get weaker. On July 1, 1901, patient was extremely weak and emaciated. Developed a large bed sore near sacrum. The sinuses continued to discharge a large amount of pus. Patient continued to sink until July 3, 1901, at 5.17 a. m., when he died. The temperature ranged from 36.26° to 39° C. In general there was little remission. Treatment was purely symptomatic and supportive. Pus centers and sinuses were evacuated and drained whenever it was deemed necessary.

Necropsy: (*Twenty-five hours after death*).—Body is that of a male, white, adult, much emaciated—lower limbs œdematous; right leg flexed at hip and knee—also adducted and everted; left leg is flexed at knee and abducted at hip; suggilations fairly well marked; rigor mortis very well marked; big toe on left foot missing. Openings to sinuses in right and left groins anteriorly. Brain: Weight, 1,380 grams. Dura adherent in places, normal in appearance; ventricles contain a small amount of fluid. Pericardium: Contains about 150 cubic centimeters of serous fluid. Heart: Weight, 220 grams; heart muscle very anæmic; aortic and pulmonic valves are sufficient by dydrostatic test; leaflets normal. Walls of ventricles unusually thin. Aorta normal in appearance. Lungs and pleura: Left pleura adherent throughout, particularly at base; left lung, weight 600 grams; apex of lung congested and contains some tubercles; floats; base consolidated and full of white nodules, from which, on cutting, a white, purulent fluid exudes; right pleura very adherent; base of lung bound to diaphragm by a strong band; right lung, weight 715 grams; floats; crepitates only at the apex; entire lung filled with nodules in a state of cheesy degeneration; lung consolidated except at apex; base very much congested. Liver: Weight 1,810 grams; has appearance of nutmeg liver on cutting; edge very sharp and hard, as in amyloid degeneration. Spleen: Weight, 555 grams; extremely hard capsule, doesn't strip, very large, nearly "spherical" in shape, very congested. Kidneys: Left kidney very adherent; weight 195 grams; capsule strips; markings normal; pelvis normal, cortex somewhat anæmic. Right kidney, weight 155 grams; cortex pale; markings normal; capsule strips; somewhat fatty in appearance, and spots of fatty infiltration in evidence. The sinuses extend above the crests of the ilium on either side, but the vertebræ can not be touched by probing. The bodies of the third and fourth lumbar vertebræ are smaller than normal and the intervertebral disks between the second and third and between the third and fourth lumbar vertebræ have been absorbed. Most of the ligaments around this area are destroyed in part or in their entirety. The spinal canal is apparently not affected.

L. S. S.
C. W. V.
J. M. G.

Traumatism of the spinal cord—sensory and motor paralysis of trunk and lower extremities.

S. O.; seaman; age, 57; a native of Finland; was brought to the Marine-Hospital Service division of the Buffalo hospital of the Sisters of Charity on the night of November 20, 1901.

History.—Had experienced the usual diseases of childhood; had never contracted syphilis; was not habituated to alcohol; had joined his ship on this day in perfect health; on returning to her from a visit into the city he missed his footing on attempting to board a small ferryboat and fell backward, a distance of some 10 feet, striking heavily upon his buttocks and shoulders. He was conveyed to the hospital and morphia administered during the night.

Status November 21.—Patient is conscious, complaining of much pain in the back; there is no bruise apparent; there is no hematuria; there is paralysis of the muscles of the trunk, and of the lower extremities; this paralysis does not extend to the upper extremities. In consonance with this motor paraplegia there is sensory paresis. This sensory change is clearly outlined upon the walls of the thorax; starting from the spinal ridge and passing forward along the sixth rib on each side is the limit of unimpaired sensation; below this line there is a very general paresthesia. Sensation in the lower limbs is practically abolished, both as to pain and touch. The bladder and rectum are inactive, the catheter being necessary. Temperature is 37.9° C., pulse, 72. Lower extremities cool and moist; his upper extremities are normal; there is a slight bruise on the left parietal region; his mind is clear; there is practically no transmission of sensory impulses from the lower extremities to the brain; the reflexes are nearly normal. There is no deformity of spine.

Diagnosis of hemorrhage into the spinal cord, or into the membranes, producing a pressure paralysis of the cord.

November 22.—Temperature 37.2° C., pulse 72; there seems a better sensory response to stimuli; there is slightly exaggerated patellar reflex. Treatment, expectant.

November 24.—Temperature 37° C., pulse 76, respiration 20; catheter used at stated intervals; rectum emptied daily with enemata.

November 25.—This morning there is apparent a slight muscular paresis in his fingers, and respiration is not so good; temperature 36° C., pulse 64, respiration 16, and shallow. Fearing possible ascending pressure from blood clot, the resident was instructed to watch carefully for symptoms of such pressure in the fourth ventricle, influencing the nerves arising along its floor, and to be prepared for a laminectomy upon the following morning.

November 26.—The pulse and respiration are improved, the latter deeper, and 18 to the minute; temperature 36° C.; operation postponed; there is decidedly improved sensation in the feet, patient with bandaged eyes detecting correctly stimuli to feet and to each toe.

November 27.—At noon there is increased evidence of ascending paralysis, the fingers are paralytic, as are the muscles of the forearms; the muscles of the upper arm are only paretic. Sensation is still unimpaired in upper extremities. Breathing is shallow, 12 to the minute; pulse 54; temperature 36° C.; there are slight lapses of consciousness. At 2 p. m. the respirations were very shallow, 8 to the minute; pulse weak and only 42; temperature below 36° C. It was decided to open the spinal canal and relieve pressure. Chloroform carefully administered. The sixth dorsal vertebra was bored, and the right lamina was removed. From the bony canal a large quantity of dark semiclotted blood escaped, as much as 100 cubic centimeters. The dura mater was incised, and again free blood escaped. A soft catheter was then passed along the bony canal upward as far as the seventh cervical vertebra, as measured along the spinous processes, and downward to the cauda without meeting any obstruction from possibly displaced bone. There was no evidence of deformity to be found. The free flow of semiclot indicated hemorrhage, apparently outside of the dura mater. Drainage was assured, and the patient reacted nicely. Before removal from the table the pressure symptoms were relieved. Pulse, 74, respiration, 22, temperature 36.7° C.

From this time he slowly improved; the muscles of his arms and forearms rapidly regained their tone; yet the fingers remained much affected, and although his arms were strong, he never afterwards fed himself. Sensation improved remarkably in the lower extremities, but muscular tone was entirely lost. Bladder and rectum inert, yet there was consciousness of desire. Treatment was tentative; the air and water bed was used, and it was not until January that there arose evidence of trophic changes. Consultation determined that the removal of some of the spinous processes and laminæ could do no harm and might disclose the seat of traumatism in the cord. Under chloroform the third to the seventh processes and laminæ were removed, the cord exposed, the dura opened. The tissue of the cord was softened, but not disintegrated. It was deemed useless to extend the operation higher. Reaction was accompanied by no improvement; large bed sores formed, and death ensued from exhaustion.

Necropsy (*eight hours after death*).—Body much emaciated; rigor slight. Over buttocks there is extensive necrosis of superficial and deep tissues, the ulcerations yet filled with a dressing of brewers' yeast. The cord alone removed. At the juncture of the first and second dorsal vertebræ there were a few adhesions between the dura and bony wall of the canal. Removal of the membranes showed that the cord was transversely divided just opposite the space between the first and second vertebræ; the division was sharply made; the cord was entirely divided; above it was firm; below the division it was softened, and for several inches was almost disintegrated. There were no evidences present of hemorrhage; there was in the third vertebra a little necrosis, but it was attributed to the operation, the diseased lamina having been exposed to injury. The questions of diagnosis and of localization were prominent in this case. From the nature of the injury—falling backward and striking on the shoulders and buttocks—it was thought probable that dislocation, with injury to vessels of the meninges, had occurred, the deformity not being permanent, or fracture with such injury from displaced fragment. It was difficult to decide which condition was present, and, from the symptoms, where the injury was located. The paresis of the fingers came on several days after the injury, and was attributed to pressure upward along the canal from continued bleeding, and later this decision seemed more than warranted by the appearance of such pressure symptoms extending upward to the floor of the fourth ventricle. The diagnosis of violent rupture of vessels of the cord, with resulting clot pressure, seems to have been sustained; yet the condition of the cord, transversely divided, might be construed as indicating primary transverse fracture of this organ. As to the question of location of the injury to the cord, the sensory changes pointed to the greatest influence upon the posterior roots passing out between the fifth and sixth vertebræ; the well-defined girdle pain, as early as the fourth day after the injury, and present thereafter until death, was along a line following the sixth rib. As above stated, the paresis of the fingers, which indicated an involvement about the region of the second dorsal vertebra, was noted about the same time, fifth day, but was attributed to extension of the clot upward. This sign, so important in these obscure conditions, did not come on at once, as did the other paralyses, and, as the necropsy revealed, this delay in its advent was the cause of its not having been accepted as indicative of the true seat of the injury. It would seem, then, that this symptom, paresis of the upper extremity, commencing in the fingers, although arising thus late in a case, should be accepted as evidence of injury in the cord at or about the space between the first and second dorsal vertebræ.

E. W.

Cervical abscess extending to mediastinum.

A. P.; white male; aged 37 years; nativity, Sweden; was admitted to the United States Marine Hospital, Chelsea, Mass., October 16, 1901.

History.—October 16.—Was treated for syphilis in this hospital in 1894. Four days ago a swelling appeared on the right side of his neck and swallowing became exceedingly painful and difficult. The swelling was nearly symmetrical over the anterior aspect of the neck, from the larynx above to the sternum below, but slightly more prominent on the right side of the median line. The surface was not red or œdematous, but exquisitely tender on palpation. Temperature normal; chest normal, except for few mucous râles over left lung; heart was rapid, but the sounds were clear. The bowels were opened with a saline purge. Hot bichloride dressings were applied to the neck and gave slight relief. Patient was given potassium iodide, as there were active signs of syphilis present.

October 17.—Temperature normal morning and evening; condition unchanged.

October 18.—Temperature was normal in the morning and 38° C. in the evening. Decided redness over the tumor and slight œdema.

October 19.—At morning sick call patient was feeling greatly relieved and stated that he felt something give way in his neck, followed by relief of the dysphagia. At 11 a. m. he was seized with agonizing pain in cardiac region and difficult breathing. Countenance dusky and anxious, pulse feeble and rapid, surface cold, the general condition bordering on collapse. Hypodermic of morphine was administered. On examination of the swelling in the neck a slight degree of emphysema was shown on palpation. At 12.30 patient was given a hypodermic of strychnine. Ether was administered, and an incision was made at the base of the neck, over the anterior border of the right sterno-mastoid muscle. An abscess cavity was disclosed beneath this muscle, which was freely opened, and a quantity of foul-smelling pus evacuated. A sinus was found leading down beneath the sternum into the mediastinum. The tissues around the abscess were in various stages of necrobiosis. The patient recovered from the anæsthetic and expressed himself as feeling comfortable. The pain recurred in the cardiac region at 6.30 p. m. and again at 10.30 p. m. The patient died at 4.40 a. m.

Necropsy (ten hours after death).—Body is that of a fairly well nourished male. Rigor mortis well marked. Post-mortem lividity present along back, penis, and scrotum. Eye lids open; pupils dilated. Dissection of the right side of the neck revealed the following condition: The sterno-hyoid muscle and the anterior belly of the omohyoid were gangrenous and easily torn. The sterno-hyoid muscle was badly decomposed, only a few fibers remaining. Beneath this muscle was found the abscess cavity, a dirty gray in color, lying to the right of the trachea and attached to the tissue surrounding the œsophagus. Its walls were thin and very friable. In the lower portion of this cavity was found a small quantity of thin, brownish, purulent fluid. Beneath the sterno-mastoid muscle a sinus led down under the sternum to the anterior mediastinum. There was no opening between the cavity and the œsophagus or trachea. The anterior mediastinum contained a small quantity of purulent matter. All the tissues were discolored and showed evidences of rapid disintegration. The outer surface of the pericardium was dark gray in color. On opening, the inner surface was normal; the cavity contained about 50 c. c. of fluid of a darker color than normal. The heart weighed 400 grams. The cavities contained both ante-mortem and post-mortem clots, but no fluid blood. The valves were normal. The walls of the heart were soft and readily torn. Some emphysema was apparent along the anterior border of the left lung, and especially the lower lobe. The left lung weighed 560 grams, crepitated, and was normal, except for hypostatic congestion posteriorly. The right lung weighed 740 grams, and the right pleural cavity contained a small quantity of amber-colored fluid. The borders of the lobes of this lung were slightly adherent, showing evidences of adhesive inflammation having begun. The lung otherwise was normal, except for congestion posteriorly. The liver was enlarged; weighed 2,700 grams; the right lobe was adherent to the diaphragm. On section, it appeared to be darker than normal, and could be torn with ease. The gall bladder contained about 60 c. c. of bile.

The spleen was large and weighed 670 grams, crepitated on pressure, and was found on section to be pulpy. The kidneys were normal, except that they were unusually soft. The right kidney weighed 200 grams and the left 180 grams. The stomach contained about 500 c. c. of digested food. Its walls were congested and were readily torn.

The pancreas was softer than normal. The intestines contained a quantity of fecal matter and gas. The bladder was empty. The brain weighed 1,450 grams and was apparently normal. The membranes were adherent along the superior longitudinal sinus, particularly over the right parietal convolutions, where they were inseparable and stripped off together.

F. I.

ANEURISM OF AORTA.

W. G.; age, 49 years; nativity, New York; height, 5 feet 8 inches; weight, 167 pounds; admitted to United States Marine Hospital, port of New York, N. Y., July 1, 1901.

Family history.—Parents died of chronic kidney trouble.

Past history.—Has had gonorrhœa, and gives history of penile sores followed by syphilides; treated for syphilis twenty years ago.

Present history.—For the past year has had pain in left shoulder, darting in character up to left side of neck and face. Loss of voice and vision of left eye impaired. Examination shows the left vocal chord to be paralyzed. Examination of chest gives no pulsating tumor, no bruit. Patient is anæmic. From the date of his admission to August 14 his principal symptoms were pain, sleeplessness, and gradual weakness. On August 11 patient had a severe chill, followed by temperature of 38° C.; left radial pulse much smaller than right, and dullness at left apex; extends as low as third rib. On August 12 patient had a collapse while at stool and expectorated a large quantity of blood. Later blood was passed by the bowels. He gradually grew weaker, and, after a severe hemorrhage by the bowels on August 14, he died. Heart sounds throughout were normal, and no bruit or tumor was detected. The treatment consisted mainly of iodide of potassium.

Necropsy (*twenty-three hours after death*).—Body, male, apparently 50 years of age. Rigor mortis fairly well marked. Body not emaciated, but quite exsanguinated. Muscular development good. Pupils evenly dilated. Blood flows from mouth. Postmortem lividity marked in lower abdomen. Hands and nails livid. Subcutaneous fat well marked. Heart: Opened in situ. Pericardium smooth and glistening, apparently normal. Fluid is considerably increased, but of the usual color. Left ventricle is empty and is dilated and heart muscle is pale. Right ventricle contains pale clot and some thin liquid blood, dark in color. Left auricle empty and dilated and right auricle also contains thin, dark blood. Valves are normal and all are competent to hydrostatic test. The great vessels at the base present nothing unusual except in the aorta at its beginning, and continued upward, it seemed a little more dilated than normal, and a number of atheromatous patches, some being calcareous, are seen on its inner surface. Weight, 400 grams. Lungs and pleura: Left pleural cavity presents nothing worthy of note. Left lung is adherent to a mass at its apex. On moving the lung and cutting through base, a sanguineous exudate discharges. It is very œdematous at base and apex. The apex is contracted and contains no air. It is greatly congested. Weight, 500 grams. Right lung is also adherent at its apex, but adhesions are not so extensive as in the left lung. This lung is also congested, but not to the degree of the left; weight, 460 grams. On removing the sternum a large tumor mass is seen, which extended into the anterior superior mediastinum. Pressure upon this mass causes blood to exude from the mouth. It is hard to the touch and covered on its anterior surface with fat. The finger introduced into the aorta passes directly into this mass, which seems to form a part of the vessel. Removal of the surrounding viscera shows it to be of a much larger size than originally supposed. An attempt to remove it shows that it adheres to the pleura of the left side in its upper portion. Opening, the tumor shows a large clot and reveals the mass to be a large sacculated aneurism, involving the transverse and descending parts of the arch of the aorta. The anterior wall of the sac is very thin, bluish in color, and shows a beginning necrosis extremely foul smelling. Opposite the second dorsal vertebra an opening is seen from the aneurysm into the œsophagus about 5 cm. in diameter and surrounded by dark bluish area. The edges of the opening are smooth and round, the lower portion of the inner surface of the sac is yellowish-white in appearance. The remainder of the inner surface is dark blue and quite thin. The clot weighs 345 grams. The external surface is irregular and the posterior and anterior surfaces are yellow in color and covered with a purulent material. The base is concave in appearance and about the size of a drinking glass and to it is attached a small red clot. Cut section shows it to be laminated and for the most part grayish yellow in color. The œsophagus presents nothing except as above described and also a small quantity of blood. Intestines greatly distended with gas and contain quantities of dark grumous blood. Stomach contains about 350 c. c. of dark clotted blood. Kidneys appear normal, except for the fact that they are pale and capsule strips easily and markings distinct. Left weighs 165 grams and the right 140 grams. Gall bladder contains small quantity of bile. Liver surface is paler than normal, cuts easily and cut surface is pale; weight, 1,700 grams. Spleen pale, otherwise normal; weight, 195 grams. Other organs normal. Calvarium not removed.

P. H. B.
J. B. G.

ANEURISM OF ABDOMINAL AORTA.

B. P. G.; age, 57; nativity, Greece; admitted to United States Marine Hopital, Louisville, Ky., January 3, 1902; died January 23, 1902.

Patient was first admitted to this hospital March 7, 1901, at which time he gave the following history: That up to four years ago he had been perfectly healthy, since that time he had suffered from rheumatism in right shoulder and leg, practically the right side of the body for the last six months. This was three years ago. For past year and a half he has suffered from indigestion, characterized by a heaviness in left hypochondrium and sometimes nausea, never vomiting. Has lost 17 pounds in weight in last four years. At present stomach bothers him little, the chief trouble is with the bowels, which are inclined to be costive. Also suffers from pain in lumbar region, worse in morning upon arising. This pain continues up to the afternoon about 4 p. m. and then becomes easier. The pain is shooting in character and lying down relieves it.

Patient only stayed in hospital about a week, returning, however, about two weeks later, and staying two months and a half. During this second stay he was at one time very near death, and the most vigorous measures, including transfusion, were necessary to keep him alive. He went out of hospital about June 1, returning on July 6, and remaining until August 6. At this time a severe neuralgic pain below right ankle was his chief complaint. For its relief acupuncture and the injection of adrenalin chloride were tried unsuccessfully. Patient was again admitted on September 14, at which time he presented the following appearance, and in addition, the information was extracted from him that ten years ago he had a slight stroke of apoplexy, affecting right arm and to less extent right leg. However, he denies any history of syphilis.

The severe neuralgic pain below right ankle, which is worse at night and which then keeps him awake, is his chief complaint. However, now this pain seems to alternate with the pain in his abdomen. Symptoms of tumor in abdomen, a feeling of weight and heaviness in epigastrium, which is relieved by lying down. The pulsation is always perceptible to the patient. Patient suffers from dyspnœa, and is in an anæmic condition. He eats and sleeps poorly and suffers from indigestion. He is steadily losing weight.

Patient is a small, spare man, with a yellowish pallor on his face that is seen in those with long wasting diseases. Pulsation in abdomen is plainly visible in the epigastrium over an area as large as the palm of one's hand. Palpation demonstrates the pulsation to be due to the presence of a pulsating tumor in the epigastrium. This tumor is about the size of a large orange, and is expansile in all directions. With patient in the knee-chest position, the tumor can still be felt, and be felt to pulsate. On auscultation a loud aneurysmal bruit could be heard. No heart murmur was discovered, and the lungs and other organs were apparently normal. Blistering of the spot below the ankle was tried without result. However, cauterizing the painful area and along the course of the posterior and anterior tibial nerves seemed to be of benefit, for afterwards the pain was never complained of, although still present in a minor degree. In addition tonics were given to improve the appetite. Analgesics to relieve the severe lumbar pain and somnifacients at night. Potassium iodide in as large doses as patient could stand was also given.

On November 8 patient expectorated about a teaspoonful of bright red blood. On December 3 he went out of hospital feeling improved in every way, and worked for a short time, returning to hospital a month later, having lost all that he had gained.

The pain in back has become more severe, and patient is suffering from loss of sleep as a result. Pain below ankle has entirely ceased. On palpation the tumor in epigastrium was not markedly larger, but to the examining finger it seemed to be thinner walled. In fact, the blood seemed to whirr just under the finger.

On January 20, patient began to have severe paroxysms of abdominal pain, some tympanites, and also apparent increase in size of tumor. The next day condition was unchanged, except that patient had become flighty and irrational. Pulse was good. Paroxysms are about twelve hours apart, and of such severity that patient would get on his hands and knees in order to get fancied relief. During day bowels moved slightly. Opiates were given p. r. n.

22d.—Refuses practically all nourishment. However, pain does not seem so severe or so prolonged. Is still delirious. Repeated enemas have been ineffectual, tympanites is marked, and the belly is protuberant.

23d.—Passed a large amount of gas, tympanites much diminished. Feels much better.

24th.—Condition unchanged.

25th.—About 6 p. m. had more severe paroxysms of pain, only controlled by repeated hypodermics. Slept then until 10.30 p. m.; at that time seemed better; was somnolent; had a very fair pulse. A few minutes later called the nurse, conversed for a minute, said the pain was returning, gasped, and died.

Necropsy (*sixteen hours after death*).—Body of an adult, white, male. Rigor mortis well marked. Lividity on arms and back. Body somewhat emaciated. Abdomen retracted. Usual median incision made. Very little fat in subcutaneous tissues; line of cut, dry and bloodless. The costal cartilages partly calcified. The right lung overlapping the left to left of median line, after the pleura and anterior mediastinum were opened. Pericardial cavity contained about 30 c. c. of clear fluid. Heart seemed small and contracted. Right auricle and ventricle thickened; pulmonary and tricuspid valves competent. Left ventricle very much thickened, the hypertrophy of the heart being general. Some thickening of the edges of the mitral valves. Aortic and mitral valves competent. A patch of atheroma, size of a quarter, just outside the valve. This spot of atheroma is partly calcified. Weight of heart, 250 grams. Left lung free in pleural cavity and floating on top of 1,800 c. c. of blood-stained fluid. Beneath lung and fluid was a fresh, dark-red clot, occupying the whole posterior or lower part of the pleural cavity. Weight of this clot, 1,500 grams. The weight of clot and fluid together was 3,000 grams, or about 8 pounds, which in this subject was .8 of his blood. The clot was a very recent one, and no attempt at all of organization was present. Left lung nowhere adherent, light, and crepitant. Weight of left lung, 220 grams. Projecting into left pleural cavity at its lower part was the aneurismal dilatation of the aorta, which is seen to be thoracic as well as abdominal. At the lowest part of the swelling is the point of rupture, which is small, would probably admit a slate pencil, and now filled by a fresh clot. On attempting to remove the right lung it is found to be adherent everywhere to the pleura by old, thin, tough adhesions—so tough that on removing lung sometimes the parietal pleura was torn from chest wall, sometimes visceral pleura and lung substance were torn away. Especially adherent over liver. Lobes equally adherent to each other. At the lowest part of lung—i. e., just over liver—there is a mass of adhesions partly old, though, scattered about are spots containing fibrin, from which all the fluid had not been squeezed. This condition of universal adhesion was due to a previous rupture into this right pleural cavity, a stoppage of the rupture by clot, subsequent absorption of fluid, and organization of the remaining fibrin. The fresher adhesions at lowest part of lung, and this corresponds to aneurism, can be accounted for by the forcing in of fresh blood from time to time through or near the site of the old rupture. The fact of there being no longer a space in this pleural cavity and of the strength of the adhesions prevented these hemorrhages being larger. The right lung contained a few spots of congestion behind, otherwise crepitant; weight, 320 grams. On inspecting abdomen, the intestines, and especially the ascending colon, are seen to be much distended. The cæcum is size of a child's head. Several hourglass constrictions, probably post-mortem, in colon, one near splenic flexure, another about 4 inches below. The fact that the abdomen seemed retracted rather than distended, as during life, is partly due to the fact that the intra-abdominal pressure has forced the liver up, compressing the lung. The appendix was normal. A fan-shaped process of the great omentum converged toward and entered into the right inguinal canal to the depth of 2 inches, being adherent also to the neck of the hernial sac. The spleen was somewhat enlarged; weight, 205 grams. Left kidney elongated in form, dark in color; capsule adherent. On section the kidney was seen to be congested and bleeds freely. The structure is fibrous and granular in appearance. Weight of left kidney, 170 grams. Right kidney similar to left in appearance. Weight of right kidney, 150 grams. The liver was very adherent above the right lobe. Liver felt fibrous on section and surface of cut was granular, the same sclerotic process having involved the liver as well as the kidneys and blood vessels. Weight of liver, 1,200 grams. The stomach, duodenum, and other intestines, diaphragm, remnants of the pleura and pericardium were removed in a special dissection of the aneurysm. In addition to a uniform aneurismal dilatation of the arch of the aorta, there was present the large aneurism previously mentioned. This was fusiform in shape and extended from the body of the seventh dorsal vertebra above to the body of the second lumbar below, of about the diameter of a large orange about its center and near its end tapering to the size of the normal aorta. Spreading out and adherent to the vertebra from the ninth dorsal to the first lumbar. Below, in abdominal portion, was a process about the size of a large walnut projecting out from the front of the tumor. The diaphragmatic opening represented about the center of the tumor. The tumor was freed easily, except the portion adherent to the vertebra, which had to be torn loose, disclosing the fact that the posterior wall of the aneurysm was formed by bone at this point. Bodies of the ninth, tenth, and eleventh dorsal vertebræ were about half eroded, although the intervertebral disks were not and projected into the tumor. The aneurism in its center contained a fresh red clot; the walls contained laminated red and black clots.

T. D. B.
G. B. Y.

ANEURISM OF THORACIC AORTA.

J. J.; white; age, 31; nativity, Norway; admitted to the United States Marine Hospital, New Orleans, La., February 15, 1902; died April 16, 1902.

Previous history.—Patient states that his general health hitherto has always been excellent. Two years ago he had a mild attack of malarial fever which lasted about two weeks. Beyond this he can not remember ever having had any serious illness. Says that three years ago he had a chancre of the penis, the nature of which he does not know. Has never suffered from any symptoms since. Has been a heavy drinker for the last ten years.

Present illness.—About two months ago patient began to be troubled with a hacking cough, worse at night time. This cough was not accompanied with expectoration. About six weeks ago he commenced to have a dull, aching pain in the chest, beneath the sternum. The pain did not trouble him much during the day, but was severe at night. When he lies on the right side the pain is to the right of the sternum, and when he lies on the left to the left.

Physical examination.—Temperature, 37°; pulse, 76; breath rather foul and tongue coated. Beyond a condition of slight anæmia the patient presents no physical signs and is well nourished and well developed. Examination of blood negative.

The patient was placed on mixed treatment and iron administered with a view to improving the condition of anæmia. The patient failed to improve and complained much about the pains in his chest at night. Aneurism of the aorta was suspected, but physical examination, however, was still negative over the thorax, and no difference could be detected in the carotid or radial pulsation on either side. About this time, the 19th of March, the patient developed a very troublesome cough, with a frothy expectoration. Examination of the sputum was negative, only a few leucocytes and alveolar epithelium being found. The patient's condition remained about the same until about the 6th of April, when he developed a condition of dyspnœa on exertion. Physical examination showed at this date that the heart had been dislocated to the left, beyond the nipple line and that the left lung was in an atelectatic condition.

It was thought at this time that the diagnosis lay between a tumor of the mediastinum or an aneurysm of the descending arch of the aorta. On the 13th it was noted that a systolic murmur was present at the base of the heart. On the 16th, at 4.45 p. m., the patient complained of a sudden pain in the chest, became very pale, and soon became pulseless. The respiration was sighing and the pupils dilated, and the patient presented all the symptoms of internal hemorrhage. Died quietly at 6.25 p. m.

Necropsy (*fourteen hours after death*).—Body of a well-developed and well-nourished male. Height, 168 cm. Weight, 65 kilograms. Rigor mortis present. Percussion over left side of thorax showed flatness involving the whole left side of the chest. The body was now opened by the usual incision. On opening the abdominal cavity the peritoneum, both visceral and parietal, was seen to be smooth and glistening, but felt drier to the touch than the normal. No adhesions were present nor were any abnormalities observed in the relation of the various viscera. The thorax was now opened. On opening the left pleural cavity it was seen to contain about 2,000 c. c. of blood, partially clotted. The left lung was completely atelectatic, and on removing the blood an opening was found in the pleural membrane beneath the left bronchus, which led apparently into an aneurismal sac. The heart was now exposed. About 100 c. c. of clear fluid was found in the pericardial cavity, whose lining membrane presented no peculiarities. The heart weight, 310 grams, was normal. The aorta, whose origin presented no abnormalities, was enlarged and thickened, commencing with the origin of the left subclavian artery, and about 3 cm. beyond this point gave off a large aneurismal sac, which passed downward, in relation to the œsophagus. This sac was intimately adherent to the œsophagus and the downward prolongation of the cervical fascia. When full it evidently compressed the left bronchus between it and the transverse arch of the aorta, thus accounting for the condition of atelectasis of the left lung. The point of rupture was just below the left bronchus. The walls of the aneurismal sac were very thin and presented but little evidence of clot formation. The right lung weighed 380 grams and presented a condition of compensatory emphysema. The abdominal organs presented no abnormalities except the spleen. This organ was very soft. Weight of abdominal organs: Liver, 1,600 grams; spleen, 200 grams; left kidney, 150 grams; right kidney, 150 grams; pancreas, 120 grams.

Cause of death: Rupture of aneurism descending arch aorta into left pleural cavity.

J. W. S.
C. P. W.

ANEURISM OF AORTA.

H. W.; negro; age, 22; nativity, Virginia; admitted to the United States Marine Hospital, Chelsea, Mass., April 7, 1902; died April 12, 1902.

On admission patient gave a history of having had a chill four days previous, with nausea and vomiting, followed by cramps during the night, but no diarrhœa. Complete loss of appetite and general malaise. Temperature, 37.6 C.

It was very difficult to obtain a clear history from the man on account of a low grade of intelligence. He had a contusion on his left hand which he said had been caused by a barrel falling against it while unloading the vessel. His evident reluctance to give any information may have been due to the fact, discovered after death, that he had been engaged in a brawl in a local saloon and had been severely punished. Though he complained of some pain over the præcordium, there were no evidences of valvular disease, nor did his lungs show any evidences of pathological conditions. Urinalysis revealed nothing pathological. Patient was put to bed. Temperature remained normal. Patient was allowed to get out of bed, as he claimed he felt well. Early on the morning of the 12th patient drew the attention of the nurse to the fact that he was spitting up some blood. He was then put to bed, and a few moments later he was found to be dead.

Necropsy (*six hours after death*).—Body that of a well-nourished mulatto, slightly built. Rigor mortis just setting in. Post-mortem lividity absent. Tissues were practically bloodless. Thorax: On opening chest the left pleural cavity was found filled with an enormous blood clot, the lung being compressed into the upper third of the thorax. The heart weighed 320 grams and was in condition of systole; cavity empty and valves normal. The pericardium was normal; the usual amount of serum in the cavity. Lungs: The right lung was held down by adhesions to the diaphragm and to the posterior wall of the thorax. It weighed 610 grams and was normal. The left lung was firmly adherent to the apex. Its weight was 350 grams, and on section revealed some bloody mucus in the air passages. On the left side of the arch of the aorta, at the origin of the subclavian artery, was found a valvular dilatation. The walls were very thin and adherent to the pleura and apex of the left lung so firmly that the sac was ruptured in attempting to separate it. There was no organized clot in the sac. The liver weighed 1,650 grams and was normal on section. The kidneys were anæmic; weight of right kidney, 210 grams; weight of left kidney, 205 grams. The brain weighed 1,500 grams and its blood vessels were empty.

F. I.

VALVULAR DISEASE OF HEART.

Mitral regurgitation—aortic stenosis.—T. K.; age, 52; nativity Ireland; admitted to the United States Marine Hospital, Boston, Mass., July 15, 1901; died, May 15, 1902.

History.—The patients mother died from heart disease; father from old age. All of his brothers and sisters are living. His health had always been good until four months before admission to this hospital, when he noticed a pain underneath the sternum radiating to both shoulders; also excessive weakness and palpitation following any slight exertion.

Physical examination on admission showed an increased area of heart dullness, and a systolic murmur was heard over the entire chest. He was treated with heart stimulants. From May 1 he failed to respond to stimulation and died, markedly cyanosed, May 15, 1902.

Necropsy (*twelve hours after death*).—Body well nourished. Post-mortem lividity increased on dependent part and extends well up the sides of trunk and limbs. Rigor mortis well marked. A small amount of bloody serum exuding from mouth and nostrils. The subcutaneous tissues infiltrated with serum, and the vessels are distended with blood. The pleural cavities are completely distended with fluid, in which the compressed lung is floating, anchored at its hilum. Right lung weighs 635 grams; left lung weighs 520 grams. They are covered with an organized fibrinous deposit and on section appear normal. The pericardial sac contains 150 c. c. of straw-colored fluid and shows an inflammatory area opposite the apex of the heart. Heart hypertrophied; weight, 920 grams. The right auricle contains red blood clot; walls and valves normal. Right ventricle empty; walls normal in thickness. Tricuspid valves normal. Left auricle filled with red clot; walls somewhat thinned; left ventricle distended with red clot, very much dilated and walls thinned to one line at apex, where it shows on its external surface an inflammatory area corresponding to that on the pericardium. The mitral valves are incompetent, and the two posterior semilunar valves are fused and completely calcified. The peritoneal cavity contains about 1,000 c. c. of straw-colored fluid, and the intestines are distended with gas. Spleen, weight 235 grams, congested. Right kidney, weight 190 grams; left kidney, weight 220 grams; their capsules are adherent and the pyramids partially obliterated. Ureters, bladder, and urethra normal. Liver, weight 1,400 grams; shows light-colored degenerative areas on its surface. Gall bladder, walls thickened; no gall stones; contains 10 c. c. of clear fluid. Common duct patulous. Brain, weight 1,520 grams. All the vessels of cranium distended with fluid blood. Dura adherent to calvarium. The ventricles contain an excess of fluid. Brain substance appears normal. The other organs examined were found normal.

F. I.

Mitral and aortic.

L. B.; white; age, 50; admitted to the United States Marine Hospital, Chelsea, Mass., November 11, 1900; died April 25, 1902.

History.—Twenty-six years previous to date of admission patient had a chancre, followed by secondary syphilis.

On admission patient complained of hemorrhoids. Had been operated on nine years before, but piles recurred. He suffered also with dyspnœa. His bowels were very irregular. Physical examination revealed the presence of incompetent mitral and aortic valves, loud blowing murmurs replacing both sounds. The cardiac impulse was forceable and could be easily appreciated by inspection. Treatment: Palliative treatment, with rest in bed for hemorrhoids. For pain in cardiac region, the suprarenal extract appeared to have the best effect. Patient gradually failed and died April 25, 1902, at 8.43 p. m.

Necropsy (*eighteen hours after death*).—Rigor mortis absent. Body badly nourished. Post-mortem lividity marked, all the superficial veins distended and clearly defined. The thorax was opened; on left side the pericardium was uncovered by lung and the lower lobe of the left lung was compressed and pushed backward toward the vertebral column, behind the heart, which was greatly hypertrophied. Heart weight, 1,210 grams. The veins of the heart were distended with blood. The ventricles were empty and in condition of systole. There were extensive atheromatous deposits on the aorta throughout its course. The aortic valves were atheromatous. The mitral valves were patulous, admitting four fingers; the posterior segment presented several nodules and both segments were contracted. The wall of the left ventricle was 2 cm. thick, the circumference at the auriculo-ventricular groove was 36 cm. From the apex to the base it measured 18 cm. Lungs: They were firmly adherent to the diaphragm. Left lung weighed 780 grams, the right lung weighed 1,345 grams. Both lungs were dark on section and showed congestion, but floated when placed in water. Liver: The liver was enlarged, weighing 2,420 grams. Gall bladder contained about 30 c. c. of bile. Spleen: The spleen weighed 320 grams and was dark and congested. Kidneys: The right kidney weighed 270 grams and measured 14 cm. by 7 cm.; the left kidney weighed 220 grams and measured 13.5 cm. by 6 cm. Both kidneys showed pathological changes due to congestion. Brain: The membranes were somewhat congested. The brain weighed 1,300 grams and on section was congested.

F. I.

Aortic and mitral.

G. J.; sailor; white; age, 47; native of Sweden; admitted to United States Marine Hospital, Baltimore, Md., December 19, 1901; died March 17, 1902.

History.—Family history negative.

Personal history.—Present illness began about one year ago, starting with pain all over chest, but especially well marked on left side low down in anterior axillary line (about seventh rib), coming on suddenly during a wrestling bout, and associated with intense dispnœa. All symptoms improved and he was able to work. He has noticed little change in his condition, excepting probably attacks of dispnœa come on more frequently, till about two weeks ago, since which time he has been much worse and unable to work.

On physical examination the apex beat of heart is found to be displaced 7.5 cm. downward and 5 cm. outward, being in anterior axillary line and behind seventh rib; harsh murmur replacing first sound; heard over apex and in axilla—here much softer; base gives hoarse aneurismal-like murmur replacing second sound of heart and also preceding it; this is transmitted along the vessels of the neck and to the axilla. Water-hammer pulse, distinct, but not excessive; right radial artery very superficial. Murmur heard in back just about lower angle of left scapula, corresponding with both apical and basic murmurs.

Diagnosis: Valvular disease—mitral regurgitant and aortic regurgitant, and possibly obstructive; at least presystolic basic murmur exists. Attacks are angina form.

Crepitant rales fine and rare, heard about base of both lungs, especially over left; here the rales are subcrepitant over a place as large as a man's hand about and below the seat of pain.

The treatment was such as is usual in such cases with failing compensation, and at first was very satisfactory; gradually, however, the compensation gave way, and the angina-form paroxysms became more frequent and severe. Dispnœa constant; very little anasarca until the last days of life.

March 9, 1902.—Dispnœa very marked and distressing.

March 12, 1902.—Patient had very bad night; dispnœa and inability to lie down; has been worse nights for past week; considerable cough and stiff mucoid expectoration; loss of appetite.

March 17, 1902.—Patient died 3.40 a. m.

Necropsy (*eleven hours after death*).—Body of white male, medium height, well nourished, œdematous, especially the lower extremities; marked suggillation of blood to dependent parts; rigor mortis well marked; blood very fluid; no subcutaneous fat on sternum; very little over abdomen. Intestines nearly empty; almost no fat on omentum, which is very small; appendix 8 cm. long, very small; extending inward, downward, and backward. Pericardial sac opened; contained 75 c. c. clear fluid; small fibrous deposits; granules the size of millet seed on both parietal and visceral layers near apex. Heart very large, weight 720 grams, apex behind seventh rib and nearly in anterior axillary line; walls of left ventricle very thick (2.50 cm.). Ventricle filled with blood, but not distended; mitral valves deformed with atheromatous nodules and incompetent; aortic valves markedly incompetent and atheromatous, with calcareous deposits in and behind them; one valve normal, one contracted and much thickened, does not meet the other; one of them has a fragment torn from the edge of valve, and hanging loose in lumen of auriculo-ventricular, opening evidently an old lesion, also contracted at point. First part of aorta is dilated and has, especially at the arch, many scars and losses of substances, with atheromatous patches and some calcareous ones, one of which shells out nearly as large as a dime. Tricuspid valves normal. Left lung: Some adhesions anteriorly, at apex, diaphragm and posteriorly; none laterally; those posteriorly are dense, others slight or medium. Right lung: Adhesions very dense throughout. Both lungs are markedly congested, especially posterior and diaphramatic portions, and filled with dark blood, but no consolidation, and otherwise normal. Gall bladder filled with dark-green bile. Liver: Weight, 1,995 grams; atypical nutmeg liver with marked passive congestion. Right kidney: Weight, 180 grams; large and congested, capsule not adherent. Has one urinary cyst as large as an acorn. Left kidney: Weight, 210 grams; large and congested, capsule not adherent.

H. R. C.

Aortic and mitral—Chronic interstitial nephritis.

P. L.; age, 41; nativity, Sweden; admitted to United States Marine Hospital Chicago, Ill., November 27, 1901; died January 9, 1902.

Patient gave history of several attacks of rheumatism during past eight years. In April, 1901, he was treated at this hospital for valvular disease of the heart, being discharged improved on October 28, 1901. On November 27, 1901, was readmitted, presenting the following symptoms: Marked œdema of legs, considerable fluid in abdominal cavity, extreme dyspnœa and weakness. Heart showed great enlargement, both dilation and hypertrophy, with harsh systolic murmurs over the apex and aortic area. During the last few days of life there was but little if any response to treatment, and death occurred January 9, 1902, at 2.30 p. m.

Necropsy (nineteen hours after death).—Body that of a well-built man, showing no deformities; abdomen is large and prominent; the posterior portion of body, extremities, and head show marked suggillations; the lower extremities and feet are very œdematous. Rigor mortis moderate.

On opening thorax the left lung is found extensively adherent to the parietes and pericardium; the right not adherent. Pleural cavities rather dry. Right lung weighs 930 grams and left 650 grams; both show marked hypostatic congestion; bronchi contain sanguineous frothy mucus; upper portion of middle lobe of right lung is consolidated and on section was of a dark-blue color. Heart was firmly adherent to pericardium throughout. Heart is enormously enlarged, weighing 800 grams; contains but little red clot. Upon opening, heart is found to be greatly dilated, a former compensatory hypertrophy having yielded to a later dilation. The auricles, particularly the left, showed fatty degeneration. The walls of the left ventricle were very thin, especially near the apex. The tricuspid valves were pale, flabby, and slightly retracted, and the mitral valves were greatly thickened and retracted; the aortic valves were somewhat thickened, probably the result of an old endocarditis; the aorta just beyond the coronary arteries showed a large patch, evidently the seat of a former atheromatous area, as in this area the intima of the aorta was slightly roughened. The coronary arteries were apparently normal. Kidneys: The right weighed 125 grams and the left 145 grams. Both were slightly lobulated and the capsules of both were somewhat adherent. The cortex was narrow and the pyramids rather illy defined. Both kidneys were resistant to the knife, cirrhotic, and considerably congested. Pancreas was also congested, but presented no gross pathological changes. The spleen weighed 160 grams; was very tough, dark, and congested; its capsule was wrinkled and its edges sharp. The liver weighed 1,560 grams; was very firm and showed marked passive congestion. Gall bladder was half filled with bile; no gallstones present. The omentum was apparently normal in appearance and rolled up between the stomach and transverse colon; no adhesions. The stomach contained about a pint of fluid; its walls were mottled in appearance, showing a chronic passive congestion. Intestines were normal in appearance. Appendix normal. The parietes and interstitial tissues of the abdomen were markedly œdematous. The abdomen contained about 7,500 c. c. of straw-colored fluid. Bladder normal; contained a small amount of urine. Seminal vesicles also normal.

L. P. H. B.
W. C. B.
H. W. S.

Aortic and mitral.

P. N.; white; age, 74 years; nativity, Germany; admitted to the United States Marine Hospital, New Orleans, La., August 19, 1901; died November 15, 1901.

Physical examination on admission.—Inspection shows a general condition of arterial sclerosis. There is marked bulging of the pericardium and a heaving apex beat is visible, especially downward and to the left. There is also visible pulsation in the carotids, the temporal, brachial, and radial arteries. On palpation a thrill can be felt over the precordium. Percussion shows great increase of the area of cardiac dullness. On auscultation a systolic and presystolic murmur is noted at the apex, very loud, and diffused over the whole chest; at the seat of the aortic valve there is a very loud regurgitant and systolic murmur, which is transmitted down along the right parasternal line and conducted along the carotid and subclavian arteries. The other valvular sounds are pretty well obscured by the murmurs already noted, but it is probable that the tricuspid valve is also affected, as the patient has symptoms of venous engorgement, such as œdema of the extremities and orthopnœa.

The patient was put on the treatment usual in such cases, but failed steadily. The condition of anasarca grew worse until he died, November 15, 1901, of pulmonary œdema.

Necropsy (*eleven hours after death*).—Body of a man 172 cm. in height, weight 82 kilograms; well nourished and well developed. Rigor mortis present. Some general anasarca; œdema of legs and thighs well marked. Body opened by incision from sternal notch to os pubis. Subcutaneous tissues somewhat infiltrated with serum. Panniculus adiposus well developed, muscles dark and firm. On opening the abdominal cavity the peritoneum was smooth and shining, 1,500 c. c. of reddish serum was present in the peritoneal cavity. The stomach is much dilated, and overhangs completely the transverse colon, which seems to be bound by moderately firm adhesions to the posterior wall of the stomach. The great omentum is shorter than usual, and contains but little fat. The intestinal coils are moderately distended, and their capillaries deeply congested. On section, however, nothing abnormal was noticed in either the small or the large gut. Appendix vermiformis is 16 cm. in length, and adherent to the caput coli throughout its entire extent. The lumen, however, is patulous, and contains nothing but a little fluid feces. Spleen: Weight, 230 grams, capsule nonadherent, pulp firm and congested. Left kidney: There is but little perinephritic fat, weight 210 grams, capsules strips readily at lower but is adherent at upper extremity. Cortex is dark on section, and there is an overgrowth of connective tissue. Right kidney: Weight, 170 grams; two small cysts on surface, other conditions same as right.. Stomach: Dilated, the greater curvature descending 2 cm. below the level of the umbilicus. Section shows the arterioles to be dilated and an oval, sharply circumscribed peptic ulcer is present on central portion of posterior surface. Pancreas: Weight, 90 grams; nothing abnormal noticed. Liver: Weight, 1,980 grams; capsule nonadherent. Section shows typical cyanotic induration. Bladder: Contains about 100 c.c. of urine. Muscular wall slightly hypertrophied. Mucosa slightly congested. Prostate: Moderately hypertrophied. Thorax: Left pleural cavity contains about 1,000 c.c. of clear serum. Right pleural cavity entirely obliterated by adhesions, with the exceptions of a small triangular area in relation with the sixth, seventh, and eighth rib, posteriorly, which contains about 15 c.c. serum. Right lung: Weight, 1,150 grams, adherent throughout whole extent, except the small area already alluded to. The lung pits easily on pressure, and on incision clear serum exudes from the cut surface. Left lung: Weight, 750 grams; no adhesions, except one or two old ones at apex; same condition of œdema as right. Pericardium: About normal; contains about 100 c.c. of fluid. Heart: Enormously enlarged; weight, 1,045 grams. The right ventricular walls are thinned, and the ventricular cavity dilated. Some fatty degeneration of right ventricular myocardium present. The left ventricular wall is much hypertrophied, the ventricular walls measuring 3.5 cm. in thickness. Aortic valves are distorted by an overgrowth of fibroid tissue, and the valvular segments are very stiff, and present a shriveled appearance. The mitral valvular segments are also deformed by a deposit of fibroid tissue. The tricuspid valve is in a condition similar so that of the mitral. The pulmonary valve was found to be unaffected.

Cause of death was primarily pulmonary œdema, consequent upon the insufficiency of the tricuspid valve.

Mitral and tricuspid regurgitation.

C. H.; age, 37 years; nativity, Mississippi; was admitted to United States Marine Hospital, St. Louis, Mo., January 31, and died March 2, 1902.

History.—Has been "short winded" for ten or twelve years but never had "smothering" until last summer. Had syphilis before he was 20 years old; rheumatism nine years ago; œdema of ankles this week for first time; has been coughing for last three weeks which has greatly interfered with respiration; pulse is full, bounding, intermittent, rapid; heart is greatly hypertrophied and in addition is now dilated; apex beat is in eighth interspace 10 cm. to left of mammary line; loud musical murmur over base second interspace to left of median line, systolic; softer blowing murmur over apex, also systolic; digitalis alternated with strychnine; opium and cough sedative at night; whisky for a time; iodide of potash in increasing doses was beneficial; morphia sulphate was necessary in last stages.

February 7.—Urinalysis: Quantity passed in twenty-four hours, 720 c. c.; specific gravity, 1.020; reaction, acid; color, opaque amber; albumen present.

February 21.—General improvement in quality, rate, and rhythm of pulse, but not a commensurate improvement in dyspnœa; loud tricuspid murmur retains same intensity.

March 1.—Quality of pulse not as good as formerly; attacks of dyspnœa oftener than formerly; has periods of acute distress; irritable cough adds to discomfort.

March 2.—Critical condition all day. Died 6.20 p. m.

Necropsy (seventeen hours after death).—Body that of an adult male negro, muscular, and fairly well nourished. Free fluid, straw colored, in peritoneal cavity and pericardial sac. Thickness of abdominal wall 1.5 cm. All superficial vessels of myocardium injected. An old fibrinous exudate on the anterior surface of the visceral pericardium. Heart weighs 690 grams; hypertrophied and deeply congested. Aorta dilated, walls thickened, atheromatous, lining rough and uneven, but no separation of continuity of intima. Antemortem clot extending into aorta from left ventricle. Thickness of left ventricular wall, 2 cm.; of right, 1 cm. Small calcareous deposits on aortic and mitral cusps, more marked on latter. Large firmly adherent ante-mortem clot in right auricle, extending into ventricle. Calcareous deposits larger on tricuspid than on mitral or aortic valves. Lungs in situ, apparently normal except for old adhesions of right. Liver greatly enlarged. Anterior and inferior surface of left lobe presents an abscess about the size of an English walnut, containing about 25 cc. of thick, inodorous, creamy pus. No peritoneal adhesions. Gall bladder normal. Lower end of omentum attached to parietal peritoneum just above anterior brim of pelvis. Appendix normal, lying posterior to cæcum. Right kidney weighs 150 grams; cortex 1 cm. thick; capsule strips readily. Left kidney weighs 155 grams; somewhat lobulated; capsule strips readily. Both kidneys passively congested to a degree. Brain apparently normal; weighs 1,250 grams. Skull 1 cm. thick except in occipital region where thickness is 1.25 cm. Urethra pervious. Bladder contains small amount of cloudy urine. Rectum and other organs apparently normal.

J. M. H.
J. M. G.

Mitral and aortic, and chronic nephritis.

H. W.; negro; age, 35; nativity, Virginia; admitted to hospital, Norfolk, Va., December 17, 1901, complaining of shortness of breath, feet swollen, can't lie long in bed from choking sensation, can't walk up steps quickly, can't run, gets "scared" in sleep. This condition has lasted for last two months. Used to get drunk about once a month. Dry cough, no expectoration. Lungs negative. Heart hypertrophied, apex displaced to left, double murmur, water-hammer pulse, mitral and aortic regurgitation. Eyelids swollen; face somewhat swollen.

Treatment.—Infusion of digitalis, strychnine, nitroglycerin, p. r. n., and milk diet.

Transferred to United States Marine Hospital, Baltimore, Md., December 31, 1901. Upon arrival at hospital was exceedingly weak from journey.

Examination.—General nutrition good; epitrochlear glands enlarged; œdema about ankles and puffiness below eyes. Heart, action violent; area of dullness greatly increased; mitral and aortic murmurs; has metallic or raspy cough, and is passing a small amount of urine of a specific gravity of 1.032; no albumen found.

Treatment.—Heart and kidney stimulants, nitroglycerin, salines, etc. Large high enemas of warm water, warm packs, etc.

Condition gradually grew worse, with decreasing amount of urine, and subnormal temperature for one month or more, resulting in death February 11, 1902.

Necropsy (one and one-half hours after death).—Body of black, male, medium height, fairly well nourished. Right testicle atrophied. Rigor mortis has not appeared. Scars in left inguinal region; pigmentation in right hypochondriac region. Subcutaneous fat absent. General atrophy of muscles of body; medium amount of œdema of subcutaneous tissue. Right pleural cavity, normal in appearance; contains 20 c. c. slightly blood-stained fluid. Left pleural cavity, normal in appearance, contains 150 c. c. slightly blood-stained fluid. Right lung much pigmented over anterior surface of superior lobe; otherwise normal in appearance and on section, with the exception of a few calcareous nodules over surface. Anterior margin of lower lobe shows slight fibrinous exudate. Left lung, pigmented; few calcareous nodules over surface; otherwise normal in appearance and on section. Pericardium, much distended and thin, otherwise normal; contains 25 c. c. of pale fluid. Heart, greatly enlarged; weight, 680 grams; walls of right auricle and right ventricle thinned; wall of left ventricle hypertrophied. Aortic valve, hard, fibrous deposit on margin and retracted; roughening of interior of aorta. Mitral valve filled with fibrous deposit. Liver, large, dark in appearance; weight, 1,600 grams; firm on pressure; offers considerable resistance on section; cut surfaces show light areas throughout. Gall bladder distended. Right kidney, capsule adherent, weight 75 grams; dark in appearance, firm on pressure; on section marked resistance; cortex reduced to thickness of paper; malpighian bodies dark (chronic contracted kidney). Left kidney: No fat, dark; capsule moderately adherent; less hard on section than right; cortex thin; malpighian bodies darkened; this kidney is less contracted and less firm and offers less resistance than right; weight, 180 grams. Spleen: Adherent on external surface to diaphragm; dark, small; weight, 150 grams; very firm on pressure and hard on section. Bladder contracted and contains a small amount of urine. Large and small intestines normal; large, somewhat congested. Stomach empty.

J. A. N.
H. R. C.

Valvular disease of heart; mitral regurgitation and obstruction.

W. S.; age, 34 years; nativity, Mississippi; admitted to United States Marine Hospital, St. Louis, Mo., February 15; died February 24, 1902.

History.—On admission stated he had been sick three months. Illness began with œdema of extremities and gradually extended to scrotum and abdomen. A month later began to have dry, hacking cough. Later noticed dyspnœa and orthopnœa. Three years ago had rheumatism. Extremities, abdomen, scrotum, and penis all markedly œdematous. Heart dilated. Mitral systolic and presystolic murmurs. No aortic murmurs. Ascites. Urinalysis negative. Improved for a few days. Scrotum was punctured; fluid evacuated; organ much reduced in size as result. Digitalis, strychnine, and whisky used at different times.

February 23.—Complains of tormina. Face pale and drawn.

February 24.—Tormina unimproved. Pulse regular. Œdema stationary. At 12.10 p. m. gasped a few times and died.

Necropsy (four hours after death).—Body that of a male negro, apparently about 45 years old. From soles to waist remarkably œdematous. Rigor mortis beginning. Considerable serum in tissues. Pupils moderately dilated and even. Free fluid, clear, in peritoneal cavity. Omentum passively congested. Thickness of abdominal wall, 2½ cm. Abdominal fat yellow, normal in amount. Free fluid in pleural cavities. Free fluid in pericardial sac. An old fibrinous exudate on anterior surface of pericardium. All the small and large superficial vessels injected. Both ventricles filled with ante-mortem clots. Three fingers engaged in aortic orifice. Three fingers pass readily through mitral orifice. Weight of heart, 580 grams. Thickness of left ventricular wall, 2 cm. Thickness of right ventricular wall, one-half cm. The tricuspid orifice admits little more than two fingers. Heart hypertrophied and dilated. Adhesions at apex of both lungs, old. Weight of right lung, 460 grams; floats, crepitates on pressure. Extreme apex softened. Few small nodules scattered throughout. Weight of left lung, 440 grams; floats; condition of this lung similar to right, but contains no nodules. Both lungs in very fair condition. An old perihepatitis at inferior and external surface of right lobe of liver. Small, contracted liver; weight, 1,320 grams; old scars scattered over surface. Gall bladder contains viscid bile; no calculi. Left kidney lobulated; weight, 200 grams; numerous old scars scattered over surface; marked passive congestion. Thickness of cortex, 1.5 cm. "Large, swollen kidneys." Perinephritic tissues gelatinous. Weight of right kidney, 210 grams; thickness of cortex, 1.5 cm.; this kidney is an exact counterpart of the left. Stomach contains partially digested food. The lower border of the omentum is attached for a distance of about 10 cm. to the descending colon. Rectum contains feces. Bladder contracted. Large and small intestines passively congested. Appendix normal. Brain not examined. All other organs normal.

J. M. G.
J. M. H.

Aneurism, thoracic aorta, and valvular disease of heart—Aortic.

F. R.; age, 32 years; nativity, Germany; admitted to marine ward, St. Vincent's Hospital, Norfolk, Va., September 16, 1901; died October 2, 1901.

Family history.—Negative.

Previous sickness.—Malarial fever, chancroid, and gonorrhœa three times. Present illness began about two months ago with paroxysms of severe pain in the epigastrium, usually radiating to the back, occurring at night when stomach empty, and is somewhat relieved by pressure.

On admission.—The tongue is pale, coated, and tooth marked; the bowels constipated. Temperature, pulse, and respiration normal.

Physical examination.—No gastric tenderness or tumor revealed on palpation or percussion. Pulmonary sounds normal. Præcordial area: Auscultation, a diastolic murmur with maximum intensity in the right second intercostal space and transmitted toward the apex. There is very slightly visible pulsation of the carotids and brachials. The urine contains albumen, but no casts.

September 20.—Every night since admission the paroxysms of pain have occurred and required hypodermics of morphia for relief. Marked dyspnœa occurred during the severest pain.

September 30.—No apparent change in patient's condition since last note. At 7.30 p. m. patient feels choked and coughed up about 200 c. c. of bright red blood, a portion of which was firmly clotted.

October 1, a. m.—Patient is resting quietly and is feeling better. Aneurism is suspected, but careful physical examination—thoracic and abdominal—fails to reveal definite physical signs of this condition.

October 2.—At 2 o'clock this morning patient complained of severe pain in left thorax, quickly followed by dyspnœa, cough, and the expectoration of dark blood, containing firm clots. Death occurred at 2.20 a. m.

Necropsy (*sixteen hours after death*).—Height, 1.7 meters. Hypostatic lividity, moderate, of back and shoulders. Rigor mortis marked; pupils, normal. Heart: Weight after opening, 310 grams. The aortic valve is incompetent from inflammatory contraction of the segments, resulting in a curling of the edges. There are no apparent changes in the myocardium. Pericardial sac contains normal fluid. There is fusiform dilatation (aneurism) of the transverse and ascending portions of the aortic arch, the pressure backward resulting in a rupture of the vessel internally into the bronchi and pleural sac and in erosion of the bodies of sixth and seventh dorsal vertebræ, together with congestion and a small point of ulceration of the lung tissue adjacent thereto. Nares, larnyx, and trachea, normal. Lungs: Left, weight, 330 grams; posterior surface is deeply congested and shows superficial ulceration, size of silver quarter, from pressure; pleural cavity contains about 1,500 c. c. of fluid and clotted blood. Right, weight 280 grams; apparently normal; pleural cavity, normal. Abdominal contents, normal. Gastro-intestinal tract, normal. Liver, enlarged and congested and mottled in color; weight, 2,100 grams. Gall bladder and ducts, normal. Pancreas, weight 65 grams. Kidneys: Left, weight 127 grams; congested and deep red color. Right, weight 135 grams; congested; color, red. Pelvis and ureters, bladder, urethra, and prostate, normal. Spleen, weight 400 grams. The organ is enlarged and moderately firm; color, bluish red.

J. B. S.

Valvular disease of heart; mitral regurgitation; dilatation of heart.

J. T. C.; age, 62 years; nativity, Massachusetts; admitted to the United States Marine Hospital, San Francisco, Cal., June 28; died July 26, 1901.

History.—Began eight months previous to entrance with gastric symptoms, frequent urination, and great dyspnœa.

Examination on admission developed that patient had ascites and was continually belching gas. Patient has had attacks of pseudo-angina and also palpitation at times. Complained of a feeling of faintness. On inspection the precordia was found to be bulging. The apex beat was not visible. The superficial cardiac dullness was increased to the left and downward. On auscultation it was found that the first sound at the mitral area was replaced by a loud, blowing murmur, which was transmitted toward the left axilla. The second sound at the aortic area was accentuated. The pulse was irregular, small, and of good tension. The arteries were very much sclerosed. There was a moderate amount of œdema around both ankles and also about the penis. Ulcers about the ankles. Patient complained that he had to get up many times during the night to pass water; also that he had a pain over the region of his kidneys. One week after admission the general anasarca became less, due to the administration of saline purgatives.

On July 4 patient passed only 400 c. c. of a highly colored urine in twenty-four hours. It contained no albumen, but the urea was increased; hyaline casts, granular casts, pus cells, pelvic and bladder epithelium were found. On July 20 patient's dyspnœa increased and he developed orthopnœa; pulse extremely slow and irregular. General anasarca increased, so that, besides the ascites, the lower part of the body, as well as the wrists and hands, were extremely œdematous. On July 22, patient worse; dyspnœa increased; urine very scant; radial pulse almost imperceptible; no medicine could be retained by the stomach.

Julg 25.—Patient sinking rapidly, and at 5 a. m. on July 26 lost consciousness. No pulse at the radials. Alcohol and strychnine were administered, but patient continued to sink in spite of stimulants, and died at 8.15 a. m.

Treatment consisted in the administration of saline purgatives and cardiac and renal stimulants, with abundant easily digested diet.

Necropsy (*four hours after death*).—The body is that of an elderly white male, with general anasarca well marked; large blebs on both feet, on right thigh, and leg. Old ulcerations on both insteps; suggilations well marked. Brain: Weight, 1,320 grams; slightly congested. Pericardium: Contains 200 c. c. of serous fluid. Posteriorly is bound to cardiac layer by many strong bands. Heart: Weight, 650 grams; coronary arteries are very sclerotic; valves insufficient by hydrostatic test. Left side of heart hypertrophied and dilated. Aortic valve sclerotic; ring increased in size. Anterior leaflet of tricuspid valves is shrunken. Mitral valve very sclerotic; leaflets shrunken and very much increased in thickness. Aorta contained calcareous plates. Lungs: Right lung, weight 520 grams; some adhesions between lobes; floats; lower lobe shows hypostatic congestion. Left lung, weight 350 grams; lower lobe compressed and atelectatic from pressure of enlarged heart. Liver: Weight, 1,120 grams; lobulated, contracted, cirrhotic, and nutmeg in appearance on section. Spleen: Weight, 80 grams; capsule does not strip; congested; interstitial tissue increased in amount; arteries sclerotic. Kidneys: Left, weight 200 grams; lobulated; capsule adherent; fat in pelvis; markings distinct; cortex thin; marked increase of interstitial tissue; arteries sclerotic. Right kidney, weight 180 grams; appearance same as left kidney.

L. S. S.
C. M. V.
J. M. G.

Mitral insufficiency.

H. E.; age, 30; nativity, Germany; admitted to the United States Marine Hospital at New Orleans, La., February 19, 1902; died February 20, 1902.

Family history.—Negative.

Previous history.—Always enjoyed good health until 1898, when he passed through a severe attack of rheumatic fever. He had several attacks of malaria during the summer of 1901. In the fall of 1901 he commenced to suffer from shortness of the breath, rapid action of the heart, and œdema of the ankles. He applied for admission to the marine hospital in this city. He was found to be suffering from an obstructive lesion of the mitral valve. He remained under treatment for three weeks and was discharged, at his own request, improved.

Present illness.—Patient states that up to the 1st of February he remained in good health and that his heart gave him no trouble. After the 1st of this month, however, he noticed œdema of the feet on retiring. This was followed in a few days by shortness of the breath, blueness of the extremities, and attacks of dyspœna. He accordingly applied for readmission.

Physical examination.—Patient well nourished and fairly well developed. There is a well-marked lividity of the lips and finger nails. The pulse is very small, of rather low tension, rapid, and regular. A slight cough and expectoration noted. There is a slight general anasarca. Inspection of the thorax is negative. On palpation a distinct thrill can be felt over the precordium. The apex beat in the fifth costal interspace, but displaced outward nearly to the nipple line. On auscultation two murmurs are audible at the apex and transmitted outward to the midaxillary line. The first, presystolic in time, is of a rumbling, the second of a blowing character, both transmitted in the same direction. Percussion shows a considerable increase in the transverse area of the heart dullness. A number of soft moist râles can be heard over the lungs, particularly at the bases. There is slight ascites present. Patient was ordered to bed, and, as it was nightfall, he was given one-fourth grain of morphine combined with 1/60 grain strychnine, hypodermically, to relieve the cardiac dyspœna. The bowels were freely opened with salines. He passed a good night and felt much better in the morning. He ate his breakfast of 500 c. c. of milk and was sitting up quietly in bed, when suddenly he was seen to turn livid, and expired before any assistance could be rendered.

Necropsy (*five hours after death.*)—Body of a well-nourished and fairly well-developed man. Height, 165 cm.; weight, 65 kilograms. There is well-marked lividity of the face, neck, back, and most dependent parts of the body. There is slight anasarca. Rigor mortis just beginning. Body opened by incision from the sternal notch to the os pubis. On opening the abdominal cavity no adhesions are found to be present. The peritoneum, both visceral and parietal, is smooth and glistening; 3,000 c. c. of serum is present in the abdominal cavity. The diaphragm is at the level of the fourth interspace on the right side and at the sixth on the left. The sternum was now removed. Nothing abnormal noticed in connection with the mediastinum. The pericardium is now opened by a crucial incision, and it is noted that no adhesions are present and its surface everywhere is smooth. It contains 150 c. c. of clear serum. The heart, arrested in diastole, is distended with blood. On opening the right ventricle considerable fluid blood and a mass of clots are found, extending into the right auricle and the auricular appendix, and into the pulmonary artery. On removal, nothing abnormal noticed in connection with the right heart. The left ventricle and auricle, on being laid open for inspection, contained fluid blood and clots extending into the left auricle, the auricular appendix, and the ascending aorta. Of the mitral valves little is left except a fibrous ring, admitting the tips of two fingers. What traces of the valvular leaflets are left are distorted by an overgrowth of connective tissue. One leaflet of the aortic semilunar valve is slightly sclerosed and shows under the hydraulic test a slight relative incompetency. No degenerative changes of myocardium noted. The pleural sacs each contain about 300 c. c. of serum. A few old adhesions at right pulmonary apex. Left lung, weighing 450 grams, presented no abnormalities except a few old adhesions at apex and some slight œdema of the base. Right lung: Weight, 510 grams; a few old tubercles at apex, otherwise in same condition as left. Liver: Weight, 1,480 grams; capsule thin and translucent. The parenchyma of the organ is in a state of typical cyanotic induration. Gall bladder: Normal in form and position; the walls are somewhat thickened and œdematous; contains 50 c. c. inspissated bile. Spleen: Weight, 190 grams; no abnormalities. Left kidney: Weight, 160 grams; capsule nonadherent; normal in color and structure. Right kidney: Weight, 150 grams; same as left. Pancreas: Weight, 110 grams; no pathological changes noted. Stomach: Apparently normal in size and position. On section 500 c. c. of curdled milk present. Gastric arterioles hyperæmic. Neither the small nor the large intestine presents any abnormalities. Vermiform appendix: 10 cm. in length; situated behind and pointing upward and inward toward the umbilicus; it has an unusually long meso-appendix. The lumen is patulous. Bladder: Contains about 400 c. c. of clear urine. No abnormalities.

Cause of death: Asystole due to disease of mitral valve, obstructive and regurgitant.

J. W. S.
C. P. W.

Mitral and aortic insufficiency.

H. S. (colored); age, 33 years; nativity, Bermuda; admitted to the United States Marine Hospital, San Francisco, Cal., November 7, 1901; died November 8, 1901.

History.—He stated that his mother had died of heart disease. Six months previous to admission his ankles had begun to swell. This swelling was relieved on stopping work. On returning to work two months afterwards his ankles again became swollen, and he also noticed a swelling of his abdomen. The patient is dyspnœic and orthopnœic. He has general anasarca, the abdomen, legs, penis, and scrotum being extremely swollen. The heart is enlarged, the cardiac dullness extending much farther than normal toward the right, left, and downward. There is a diffuse wavy impulse over the whole præcordia. A loud systolic murmur, transmitted toward the axilla, is heard over the mitral area. Over the aortic area a systolic murmur is present, and the second sound of the heart is reduplicated. The pulse is rapid, low in tension, and large in volume. Small moist râles are heard over the base of the left lung. The liver is enlarged and tender. The hands and feet are cold. Although saline purgatives and heart stimulants were given to the patient, his condition had not improved on the morning of November 8. More râles were present in his lungs, and his dyspnœa was greater. He died that evening at 6.20.

Necropsy (seventeen hours after death).—Body well nourished; height, 170 cm.; weight, about 160 pounds. Rigor mortis is well marked. Hypostatic congestion is present in dependent parts. There is general anasarca, the abdomen, legs, scrotum, and penis being swollen and œdematous. The abdominal walls are 3 cm. thick; the peritoneal cavity contains 1,000 c. c. of serous fluid; the stomach and intestines are filled with gas; the appendix is small. Brain: Weight, 1,437 grams; tissue, normal. Heart: Weight, 525 grams; the walls of the right ventricle are 1 cm. thick; the leaflets of the valves of the right side of the heart are normal; there is a small yellow clot in the pulmonary artery; the walls of the left ventricle are 2 cm. thick; the mitral valve is incompetent, and its leaflets are thick and rough; one leaflet of the aortic valve has a large ulcerating nodule near its center; the other leaflet is much thickened. Right lung: Weight, 935 grams; the tissue is of a reddish slate color and crepitant throughout; blood and serum exude upon section. Left lung: Weight, 730 grams; the tissue is in the same condition as that of the right lung. Spleen: Weight, 150 grams; color, dark brown; the interstitial tissue is abundant. Left kidney: Weight, 207 grams; color, dark red marbled with yellow; pyramids prominent; the cortical portion is 0.50 cm. thick. Right kidney: Weight, 200 grams; the tissue is in the same condition as that of the other kidney. The stomach is 25 cm. long and 11 cm. in diameter; there is a slight congestion of the mucous membrane of the stomach and intestines. Liver: Weight, 1,820 grams; externally the color is a reddish yellow; internally the tissue shows a typical "nutmeg" appearance.

W. G. S.

Mitral and aortic.

E. S. (colored); age, 41 years; nativity, Virginia; admitted to marine ward St. Vincent's Hospital, Norfolk, Va., September 12, 1901; died September 20, 1901.

Family history negative. Patient states that he had suffered at various times in recent years from malarial fever and rheumatism, and contracted chancroids about twenty years ago. Last March he was seized with severe pains in both shoulders, which rapidly improved under hospital treatment. For the past month he noticed that his eyelids and face were swollen in the morning.

On admission: Dyspnœa from pulmonary congestion and præcordial distress, together with cyanosis and dropsy, beginning in the feet and mounting upward.

Physical examination.—Respirations rapid and short. Inspection: Apex beat displaced downward and to the left. Percussion: Firm percussion shows increased area of cardiac dullness. Auscultation reveals a double murmur—mitral and aortic. Temperature, 37° C.; pulse, 78, irregular; respiration, 28. Urinalysis: Quantity diminished; specific gravity, 1.016; reaction, acid; color, amber; sediment, none; albumen, trace; casts, none.

Necropsy (*twenty hours after death*).—External appearances: The body of a large, muscular negro, fairly well nourished. The face and extremities are swollen and œdematous. Height, 1.80 meters. Post-mortem lividity moderate; pupils normal. Pericardial sac is dilated and contains 300 c. c. of a clear straw-colored fluid. Heart: Weight after opening, 900 grams. The muscle is firm and of red color. Both ventricles are enlarged, with thickened walls, well marked in the left, and each contains a quantity of dark coagulated blood. The mitral valve is shrunken, and the seat of soft, yellowish vegetations which have undergone partial necrosis. There is obstruction to the flow of blood into the aorta from thickening and cauliflower-like vegetations of the aortic segments. The other valves and the arteries and veins throughout the body are apparently normal. Nares, larynx, and trachea normal. Lungs: Left, weight, 785 grams. The lung is mottled red in color, heavy, and less crepitant; on incision and pressure copious frothy blood exudes. Right, weight, 1,090 grams. Darker in color and somewhat œdematous at lower margin; otherwise it is similar in appearance to the left lung. Pleural cavities normal. Tongue, pharynx, and œsophagus normal. Peritoneum slightly congested. Stomach shows catarrhal inflammation and congestion about cardiac orifice. Pylorus and cardiac orifice normal. Small and large intestines normal. A few mesenteric glands are slightly enlarged. Rectum normal. Liver: Color, dark brown; weight, 2,370 grams; the organ is uniformly enlarged, congested, and somewhat friable. Gall bladder and ducts normal. Pancreas: Weight, 120 grams; normal. Kidneys: Left, weight 280 grams; the organ is large and pale yellow in color; capsule easily detached; right, weight 270 grams; this kidney is smaller and pale red in color; the surface is somewhat granular and the capsule adherent; the cortical substance is reduced in thickness. Pelvis and ureters, bladder, urethra, and prostate normal. Supra-renal bodies, left, weight 21 grams; right, weight 25 grams. Spleen: Weight, 830 grams; the organ is enlarged, pale, and firm; the pulp is firm and of a grayish color, with darker hemorrhagic points scattered through it; two cream-gray masses, size of walnut, firm and tough, were embedded on the anterior surface. Other organs not examined.

J. B. S.

CONTUSION OF CHEST AND INJURY TO LUNG, FOLLOWED BY STREPTOCOCCUS PNEUMONIA AND ABSCESS OF LUNG.

C. O'D.; white; male; age, 32; nativity, Ireland; occupation, sailor; admitted to United States Marine Hospital, Baltimore, Md., January 10, 1902: died February 8, 1902, at 11.30 a. m.

History.—Family history negative.

Clinical history.—Present illness began one week before entering hospital. Patient received seven days ago a severe blow on left side of chest, in anterior axillary line about on level with fourth rib. On admission to hospital patient's general nourishment was good; temperature 38° C.; respiration shallow, rapid, and accompanied by pain in region of injury. Some dullness on percussion over seat of injury, and numerous large and crepitant râles in same region. Morphine sulphate, 0.01 gram, was given hypodermatically.

January 11, 6 p. m.—Patient was expectorating considerable frothy sputum, indicating œdema of lungs. Atropine sulphate, 0.001 gram, was given hypodermatically, also quinine sulphate, 1 gram; and during that night morphine sulphate, 0.01 gram, and atropine sulphate, 0.0006, hypodermatically.

January 12.—Patient continued to expectorate frothy sputum, but not so profusely. Strychnine sulphate, 0.002 gram, was given every four hours, also whisky, 32 c. c., every four hours. He was markedly an alcoholic and not far from delirium tremens. At 1 p. m. temperature rose to 39° C.

Physical examination, January 26, 1902.—Inspection: Respiration regular, very slightly accelerated; chest, symmetrical; supra- and infra-clavicular spaces well filled out; body well nourished; face flushed; perspiration on face and head; very hard coughing spells at close intervals. Expectoration profuse, purulent, and foul smelling; no blood. Has been examined three times for tubercle bacilli with negative results, but numerous chains of streptococci were found, also staphylococci. Percussion: right side of chest normal; left, dullness in postaxillary line and under inferior angle of scapula from fourth to seventh rib extending posteriorly. Auscultation: Absence of respiratory murmur over area of dullness and slight flatness over this area.

January 28.—There were no certain signs of pleuritic effusion, but those of sepsis were so marked that pleural cavity was searched with small trocar, but search resulted negatively. Many large "clucking" râles in region of injury and also some consolidation; breath very fetid; temperature 39.6° C. At 6 p. m. temperature had fallen to 38.6° C; expectorating profusely, sputum purulent and bloody. Diagnosis of streptococcus infection of left lung.

January 29.—Temperature, 37.4° C; coughed much and expectorated freely sputum stained with blood. Patient is put on following treatment: Whisky, 25 c. c. every four hours, codeine and sirup of wild cherry as needed, and eucalyptol, 10 drops in capsule, every four hours. At 6 p. m. patient had some pain in left chest, and morphine sulphate, 0.01, was given hypodermatically.

January 30.—Temperature, 39.2° C.

January 31.—Temperature, 38° C. Had slight pulmonary hemorrhage.

February 1.—Small pulmonary hemorrhage.

February 5.—Patient has been having frequent hemoptysis, and to-day had small hemorrhage. Eucalyptol and codeia and sirup of wild cherry were discontinued, and creosote carbonate, 5 drops in capsule, given every four hours.

February 6.—Temperature, 37.6° C.; coughing much at frequent intervals; expectoration profuse, and sputum purulent and bloody.

February 7, 6 p. m.—Temperature, 39.2° C.; has been having violent attacks of coughing at frequent intervals.

February 8, 8 a. m.—Temperature, 38.4° C.; coughing much; 11 a. m., after severe attack of coughing, had pulmonary hemorrhage, and died from asphyxia at 11.30 a. m.

Necropsy (*three hours after death*).—Body of white male, medium height; tattoo marks on left forearm; fairly well nourished; three-fourths inch adipose tissue on abdomen; post-mortem lividity well marked in dependent parts. Pericardial sac contains 75 c. c. slightly blood-stained fluid, about one-fourth of which is clotted. Both pericardial and visceral layers of pericardium smooth, not injected, and otherwise normal. Heart: Apparently normal; weighs 340 grams; in moderate systole; mitral and aortic valves normal; pulmonary and tricuspid valves not examined. Trachea: Contains much blood, clotted; otherwise normal.

Lungs: Right, no adhesions; markedly and beautifully pigmented (anthracosis) in regular bands parallel with its border; markedly distended; on section quite an amount of frothy blood is found in bronchioles of medium size; apex normal; right pleural cavity normal. Left lung: Firmly adherent to adjacent part of sternum, having to be separated with a knife; lower lobe not adherent; upper lobe, adhesions very dense, so dense that parietal pleura pulls off the ribs in anterior axillary line on level with nipple; no adhesions in posterior part of lobe or over apex; lower lobe shows apparently recent infarcts of blood on anterior, posterior, and diaphragmatic surfaces; otherwise normal. Upper lobe, apex apparently normal; lower four-fifths, however, is solid and feels like muscle tissue, but harder, pleura on middle portion thickened probably to 0.20 cm. On section lung shows abscess filled with very offensive material and blood clot. Size of abscess cavity about 5 cm. by 2.5 cm. by 2.5 cm.; walls gray, but not broken down, and where cavity approaches surface most closely the wall is not more than 0.5 cm. from surface. Abscess has a diverticulum leading down to extreme lower surface of lobe, being about the thickness of the thumb and tapering down to one-half that size at lower extremity. There is no lung tissue at lower extremity, but layer of inflammatory exudate 0.25 cm. in thickness. Where diverticulum leaves large abscess cavity the opening is not larger than 0.5 cm. in diameter, and the abscess and diverticulum appear as two abscess cavities, joined by narrow communicating tract. At two places in diverticulum there are recent blood clots filling mouths of open blood vessels, the probable origin of hemorrhage. Lung tissue itself surrounding abscess is solid, gray, nonsuppurating, and showing no tendency to resolution; cuts like liver; bronchi closed; lumen of blood vessels plainly seen; one portion of solidified mass looks somewhat like tubercular infiltration, but on microscopical examination no tubercle is found. Apex absolutely normal; lower lobe almost entirely filled with frothy blood, the amount, however, not being sufficient to prevent its floating freely. Left pleural cavity contains no fluid. Bronchial glands black and much enlarged; soft. Fourth rib, immediately over point of maximum adhesion of pleura, shows considerable deposit of new osseous tissue, and has evidently been site of partial fracture or serious injury to periosteum. Liver extends 5 cm. below margin of ribs; weight, 2,170 grams; somewhat congested, otherwise normal. Gall bladder empty; mucous membrane normal. Spleen very soft and almost diffluent; weight, 420 grams. Intestines mainly empty; normal amount of fat on omentum. Appendix situated directly under McBurney's point; 8 cm. long, directed slightly backward and almost directly inward, reaching to median line; normal in size; meso-appendix for half its length. Stomach contains 60 c. c. of recently swallowed blood, otherwise normal. Bladder moderately filled. Ureters normal. Right kidney unduly large; weight, 190 grams; capsule not adherent; left kidney, weight, 130 grams.

H. R. C.

EMPYEMA, ENCYSTED—HÆMOPTYSIS.

J. V. (white); age, 29; nativity, Austria; entered U. S. Marine Hospital, Baltimore, Md., August 14; died August 18, 1901.

Entered hospital with a history of having had a pneumonia, for which he was treated at Galveston about three and a half weeks ago. After leaving hospital had a relapse, the pains returning at or near the same place, posterior part of left lung, and were violent. Has no return of rusty sputum; considerable cough, which is painful. Temperature, 39.8° C. Pulse, 130. Examination on the 15th showed evidence of fluid effusion in the pleural cavity, but an attempt to confirm it by aspiration was unsuccessful, the needle being inserted four times, the chart plainly indicating a septic condition. Exploration was again attempted on the 17th, and some thin but flaky, ill-smelling pus, fecal in odor, withdrawn and the operation set for the next morning. The condition of the patient was and had been good, although the evening temperatures had been high—near 40° C. At 3.30 a. m. next morning a violent hæmoptysis intervened and he died from it within half an hour. He was dead before 4 a. m.; 750 c. c. of blood clots were recovered from the bed and floor, probably about half the amount lost.

Necropsy (*seven hours after death*).—The body that of a medium sized, rather stout, well-built man. Thorax: Pericardium contains 104 c. c. fluid, reddish but clear. Right lung: No adhesions at all of pleura. Lung dilated and shows numerous infarcts of blood. These on section show blood in the alveoli and smaller bronchial tubes. In some cases, tubes 33 cm. in diameter were occluded. Left lung: No pleural adhesions in front; very dense and close adhesions on side axillary line and above just back of apex, also on posterior part next to spine, also to diaphragm from the axillary line to spine. A section of ribs in axillary line and behind revealed a collection of purulent fluid, 465 c. c., flaky with fibrin, but thin and with a bad odor, fecal partly. This was encysted and occupied the posterior and lateral part of the pleural cavity and rested broadly on the diaphragm, its boundaries being below the diaphragm; all of its posterior external part outside the rib wall as far as the axillary line from the diaphragm to the fourth rib, then sloped back nearly along that rib the angle of the ribs internally, the spine and portion of lung adherent thereto. Its general shape was pyramidal, with base below. The fluid was not bloody, and the entrance of the needle could with difficulty be made out. The front and top of this lung presented much the same appearance of the right lung, except it was less filled up with blood. There was an area of from 2 to 4 cm. around empyema which was dense and gray. Most of this was of exudate on the pleural surface of the lung, but the lung substance adjacent was carnified and internally adherent to the exudate. Nearly the whole of the lower and posterior surface of this lung was in a state of intense engorgement and very friable in many places; it has broken down and is filled with blood outside of the vessels, like a pulmonary apoplexy in a lung undergoing gray hepatization. No special source of hemorrhage was found. Abdomen: Intestines mainly empty. Appendix runs down and back, reaches to brim of pelvis near lower end of right kidney, has meso appendix for one-third of its length, 9 cm. long. Liver: Firm and hard, somewhat enlarged—2,320 grams. Spleen: Large and soft; weighs 352 grams. Stomach empty. Right kidney: Large, soft, peels well, passive congestion; weight, 212 grams. Left kidney: Like right; weight, 208 grams. Heart: In diastole; muscle normal; valves—mitral, normal; aortic, normal; other valves also normal. Calvarium not opened.

H. R. C.

INFLUENZA.

Cerebral hemorrhage.

D. M.; age, 40 years; Scotland; was admitted to the marine division of the Buffalo Hospital of the Sisters of Charity on the 5th and died on the 13th of February, 1902.

Family history.—Good.

Personal history.—Diseases of childhood; gonorrhea several years ago; two years ago he experienced great fatigue in rescuing a woman during a shipwreck, and states that he then had severe headache, dizziness, and some fever, having been confined to his bed for one month. Recovery seemed complete. Present attack came on with coryza, headache, chilliness and some fever, and cough.

Status presens.—Face is slightly flushed; there is some catarrh; frequent and free expectoration; temperature, 38.2° C.; pulse, 84; respiration, 28; says he now has no pain; his cough is loose; chest examination gave only a frank bilateral bronchitis; examination of muco-purulent sputum gave only the pus cocci.

He was placed on appropriate treatment, under which he improved. On the 11th at the morning visit he complained of some headache, and stated that it had prevented his sleeping the night previous. Bromides were ordered. At 12 m. the pain became acute, and he quickly became unconscious. During the afternoon and night there was muscular spasm of the arms, but no focal epilepsy; the pupils remained normal; the face became paralyzed on the left side. Temperature, 37.8° C.; pulse, 68; respiration, 22.

On the morning of the 12th there was decided indication of a basilar meningitis, the head being thrown backward, with constant tossing; pupils slightly dilated; left facial paralysis, the left levator anguli oris so relaxed that saliva escaped from the corner of the mouth; the tongue forcibly drawn out showed left paresis, as did the uvula. Diagnosis of cerebral hemorrhage in the deep ganglia of the brain, involving the root of the seventh nerve on the left side. It was difficult to explain the meningeal symptons save by the extension of the bacillus influenzæ to the base of the brain. Death ensued on the 13th with a temperature of 39.6° C.

Necropsy (*twelve hours after death*).—Rather poorly nourished male adult; no marks of violence, nor of syphilis; rigor marked; calvarium removed; skull normal; dura mater normal; pia and arachnoid injected; at the base of brain these membranes were acutely inflamed, covered with lymph, and bathed in a sero-pus. The fourth ventricle was bathed in pus; the lateral ventricles and the third were also full of sero-pus. On the outer wall of the left lateral ventricle there was a ragged ulceration on the surface of the corpus striatum, the edges necrosed, and from this blood-stained pus still issued. Section showed that there existed within this ganglion an old abscess, the contents caseated; that from some cause a more recent change had resulted in fresh pus formation and pressure upon neighboring structures before its rupture into the ventricle, the internal capsule and optic thalamus having been involved. The sero-pus gave staphylococcus pyogenes aureus in pure culture. It seems evident that this man suffered from a hemorrhage into the corpus striatum at the time (?) of his shipwreck two years before his death, and from which he had been ill for several weeks in hospital; that this clot had not become organized, but that the débris had ultimately become a caseated mass. There were no tubercle bacilli in this débris. The exact relationship of the staphylococcus to this caseated mass is uncertain. Was the meningitis due to the rupture of the old lesion into the ventricle, or did it occur from the invasion of the meninges by the staphylococcus known to be present in large numbers in the bronchi? I am inclined to attribute it to the latter. Other organs normal.

E. W.

SARCOMA OF BRONCHIAL TUBE; BRONCHITIS, CATARRHAL, CHRONIC.

R. S.; age, 49 years; nativity, Missouri; admitted to the United States Marine Hospital, port of St. Louis, Mo., September 16, and died November 23, 1901.

History.—On admission dyspnœa, asthmatic in character; cough; free expectoration and uncertain râles in various parts of chest, weakness and obscure pains were elicited. But little information could be had from the patient directly, as he had a cleft palate and could not well make himself understood. It was learned, however, that he had not been well for several years, having regularly to leave his work and take to bed every few months, this latest indisposition beginning with a chill on September 2. Treatment was mainly symptomatic and reconstructive, oil, malt, and whisky, various placebos for cough; iodide of potash and digitalis were exhibited in rotation with tonics, milk punch, and abundant easily digestible diet. For some time before his death he was delirious, requiring constant watching to prevent his leaving the hospital. The little improvement apparent at first ceased, and he rapidly failed, dying at 8.15 p. m., in coma. At no time did the temperature, pulse, or respiration present any point of interest.

Necropsy (*eighteen hours after death*).—Body that of middle-aged mulatto, male; somewhat emaciated. Rigor mortis well established. Post-mortem discoloration but slightly in evidence. Abdominal wall 1 cm. thick. Abdominal fat scanty and of bright chrome yellow color. Pupils normal. Anterior terminations of left seventh, eighth, ninth, and tenth ribs forming broad placque of cartilage, apparently site of an old fracture or dislocation of costal cartilages. Omentum adherent to parietal peritoneum; markedly devoid of fat. Free fluid in both pleural cavities. Left lung weighs 780 grams; floats, congested throughout, more marked in inferior than in superior lobe. In lower anterior and internal border of superior lobe there is a firm area of cirrhosis, as large as a hen's egg, free from congestion and disintegration. Right lung weighs 1,000 grams, floats; old pleuritic adhesions anteriorly, more recent at the base. Chronic thickening of anterior aspect of pleura. An elliptical scar, 5 cm. long, present near apex. Right lung consists apparently of two illy defined lobes, no third lobe being demonstrable. At the root of the right lung is located a cartilaginous mass, approximately 7.5 by 5 by 5 cm.; otherwise the condition of this lung is similar to the left. Free fluid in pericardial sac. Heart weighs 315 grams; moderately fatty. Left ventricular wall 2 cm. thick. Right ventricular wall 1 cm. thick. Valves normal. Ante-mortem clot entangled in right auriculo-ventricular orifice. Ante-mortem clot also in left auricle. Liver enlarged, extends hand's breadth below free border of ribs; mottled; adherent to diaphragm; presents a number of lobulations at its base and posterior margin; weight, 1,750 grams; tissue firm on section; large cicatrices in anterior, superior, and inferior surfaces; beginning cirrhotic contraction. Right kidney weighs 200 grams; cortex 2 cm. thick; left weighs 250 grams; cortex 3 cm. thick; both intensely congested, but otherwise normal; capsules strip readily. Spleen weighs 310 grams; friable, old scars on surface. Appendix normal, 10 cm. long. Bladder contains urine. Feces in colon and rectum. Urethra pervious; other organs normal. Some œdema of ankles. Brain weight 1,215 grams; apparently normal. Bronchial tubes thickened, congested, exuding pus on section; in some localities brittle, yielding readily to slight pressure.

NOTE.—Microscopical examination demonstrates lung neoplasm to be sarcomatous.

J. M. H.
J. M. G.

ABSCESS OF SPLEEN AND ACUTE VEGETATIVE ENDOCARDITIS.

F. M.; age, 38; nativity, Alabama; admitted to Marine Hospital, Mobile, March 17, 1902.

Personal history.—Has never before had any serious illness, except malarial fever. Says the present illness has lasted one month. Has been having pain in chest, also been having fever. Has been under treatment by a local physician, who pronounced his disease pneumonia. Has no cough and says he has not had any. Upon admission to hospital the diagnosis of valvular disease of heart, aortic and mitral, was made. The usual remedies were administered with no effect, the patient dying morning of March 20, 1902.

Necropsy (*four hours after death*).—The body of a medium size, muscular, colored male, apparently 38 years of age. Right eye closed, left eye partially open, both pupils dilated, mouth open, lips somewhat eroded. No discharge from mouth or nose. On left side of abdomen in left hypochondric region, 8 cm. from median line is a cicatrix, also a lineal cicatrix on radial aspect of left forearm. Thick mucous or albumen discharges from urethra. Has a cicatrix over each tibia. Body opened by long incision from chin to symphysis pubis. The diaphragm is attached between the eighth and the ninth ribs. The large veins of the neck are filled with fluid blood. The pericardium contains about 400 c. c. of fluid. The larynx and trachea are covered with thick frothy mucous. The arteries are normal. The left ventricle is hypertrophied. The mitral valves are incompetent and are covered with recent vegetations. The inner coat of aorta is somewhat inflamed for a few inches from root and is also covered with recent vegetations. The tricuspid valves are incompetent from same cause. The pulmonary valves are normal. The right ventricle is dilated. The heart's weight is 710 grams. Anthracosis of both lungs. Slight œdema of right lung. Its weight is 400 grams. The left lung is less œdematous than the right. Its weight is 360 grams. The spleen contains an abscess the size of an orange, and the whole structure is broken down. Its weight, without the pus, is 320 grams. The left kidney is somewhat ear shaped, flat, and shows chronic interstitial nephritis. Its weight is 150 grams. The right kidney is in the same condition as the left. Its weight is 180 grams. Both kidneys contracted. The urinary bladder contains about 15 c. c. of fluid. The liver is congested and its weight 1,860 grams. The gall bladder is thickened and is gelatinous in appearance, is empty, and its mucous membrane is stained red. The cystic duct is occluded. The appendix is long, bound down with adhesions, but no recent inflammation appears to have existed. The intestines are normal. The brain and the spinal cord were not examined.

Diagnosis: Acute vegetative endocarditis.

During the short time this man lived after entering hospital there were no symptoms whatever of splenic abscess. Only streptococci found in staining four smears of heart's blood. Cultivation tests gave the same results with specimens from spleen and kidney. No gonococci could be demonstrated.

J. G. T.
W. P. M.

PNEUMONIA.

Double lobular.

J. C.; age, 52 years; nativity, Illinois; admitted to United States Marine Hospital, St. Louis, Mo., April 17, and died April 20, 1902.

History.—Patient shows some mental confusion on admission; previous history not reliable; ambulance case. Says a week ago first noticed sharp pain in right side; had no chill; vomited; cough slight. Has had pneumonia twice; last time over twenty-five years ago. Two years ago expectorated blood. Fingers clubbed. Subject to diarrheal attacks. Denies nocturnal hyperidrosis. Family history negative. Face is flushed. Temperature, 39.2°; respiration, 40; pulse, 87; regular, but weak and of low tension. Bronchial respiration over scattered areas on both sides, particularly the right. No râles anywhere. No friction sounds. Very little pure vesicular respiration on right side. Looks like an acute exacerbation of a fibroid phthisis. Put on stimulating treatment; strychnine, nitroglycerin, and whisky, but failed to rally and died third day after admission, April 20, 1902, at 2.30 a. m.

Necropsy (thirty-two hours after death).—Post-mortem rigidity and lividity present. Body that of a white adult male, fairly well nourished. Abdominal wall 3 cm. thick; fat normal. Old pleuritic adhesions all over both lungs. Right lung weighs 2,010 grams; barely floats; upper lobe solidified except at apex; middle lobe crepitates; lower lobe less completely solidified than upper. Left lung weighs 900 grams; passively congested throughout; some areas of consolidation throughout lower lobe. Heart weighs 600 grams; somewhat fatty; myocardium pale; valves normal; left ventricular wall 2 cm. thick; right ventricular wall, 1 cm. thick; cavities filled with post-mortem clots; general condition fair. Right kidney weighs 185 grams; capsule strips readily; cortex 1 cm. thick. Left kidney weighs 235 grams; much larger than right; color contrast marked; passively congested; capsule strips readily; cortex, 1 cm. thick. Liver weighs 1,170 grams; anterior surface right lobe exhibits some areas of calcareous degeneration and several old scars; no other abnormalties. Gall bladder moderately full of tarry bile. Spleen weighs 275 grams; omentum adherent to superior surface. Capsule on superior aspect enormously thickened and in some areas has undergone calcareous changes. Evidences of old, high-grade inflammation. Parenchyma apparently normal. Alimentary tract normal. Bladder contracted. Appendix about 5 cm. long, normal. Urethra pervious. Brain not examined.

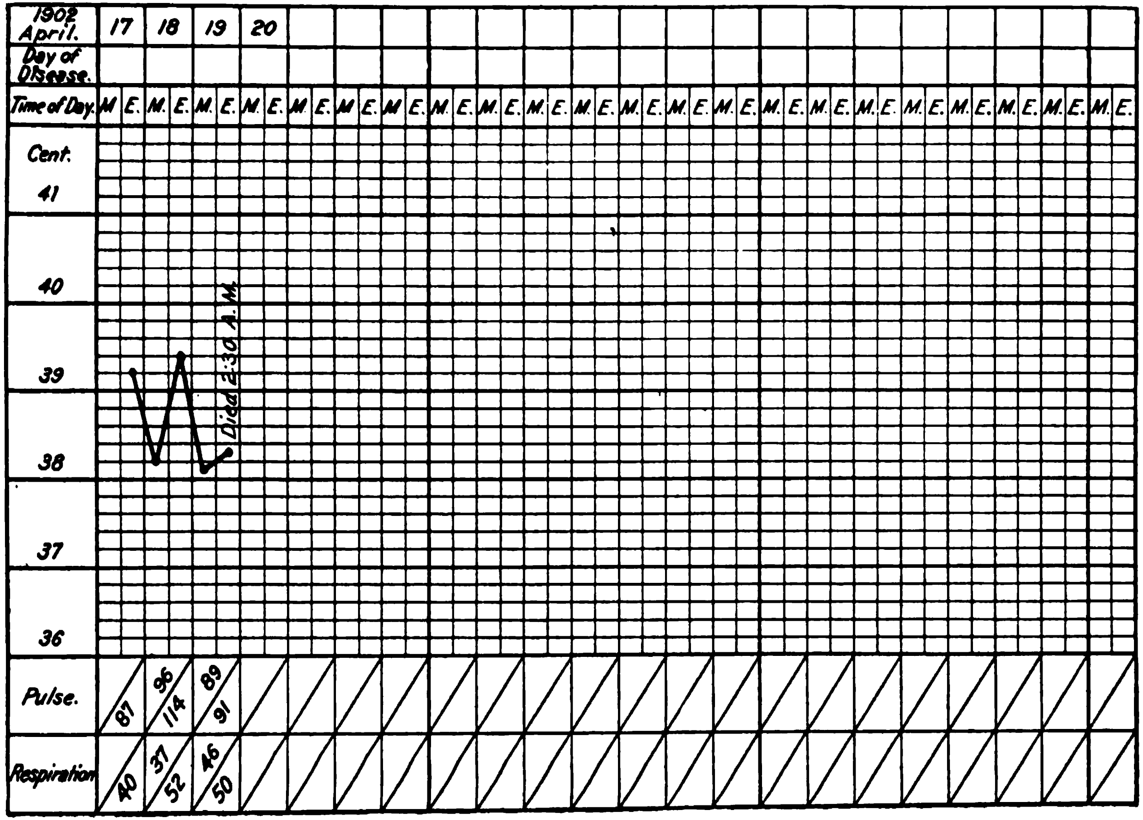
J. M. H.
J. M. G.

Pneumonia, lobar.

E. B.; age, 38 years; nativity, Indiana; admitted to the marine ward of St. Marys Hospital, Milwaukee, Wis., May 31, 1902; died June 1, 1902.

History.—He was brought down by boat from Sheboygan in an exhausted condition; so weak was he that a history was with difficulty obtained. Three or four days before arrival he had a pronounced chill, which was soon followed by pain in right chest, cough, and great prostration. On admission the temperature was 39° C.; pulse, 116, rapid and feeble; respiration shallow and hurried; face drawn and pallid; a

Name, J. C.; age, 52; disease, pneumonia, lobular, double.



diarrhea had set in. Physical examination revealed dullness on percussion over the lower third of the right lung. No crepitant râles could be heard at this time.

Necropsy (*thirty-six hours after death*).—Body of a well-nourished white man about 38 years of age; weight about 165 pounds; rigor mortis well marked. The arterial system had been injected with a solution of formalin. The left pleura and lung were bound to the diaphragm by strong fibrinous adhesions. This lung crepitates throughout, except for the lower part of the inferior lobe, which is soft and friable. Right pleural cavity was almost obliterated by the serous exudate and the fibrous adhesions, the adhesions being strongest and most marked over the middle and inferior lobes. The superior lobe crepitates on pressure, while the others are almost completely consolidated. On section a thick grumous fluid exudes, the cut surface showing a grayish-brown color for the upper part, while below the tint is of a yellowish white. The substance throughout these lobes was soft and friable. The heart was normal in color, structure, and in the arrangement of its valves. A considerable quantity of blood was found in the right auricle and in the pulmonary artery. The abdominal organs seemed normal in size and consistence with the exceptions noted below. Pyloric end of stomach showed considerable congestion of the gastric mucosa. Liver seemed enlarged and its substance changed in appearance. This might have been due to the embalming fluid. Conclusions: There is consolidation of the two lower lobes of the right lung with a fibrinous pleurisy, a condition which leads to the opinion that death was due to lobar pneumonia.

R. B.

Lobar pneumonia—Double.

J. C.; age, 43; fireman; born in Pennsylvania; white; admitted to United States Marine Hospital, Chicago, May 29, 1902; died June 3, 1902, at 12.20 p. m.

History of illness.—On entrance stated he had been exposed to severe storm of May 24. Next morning was seized with chill, stabbing pain in left chest, fever, etc. Lay in his bunk four days. Presented himself for medical treatment on the 29th and was admitted to hospital the same day. Face deeply congested with slight cyanosis, pulse 104, respiration 30, temperature 40, tongue moist, with light-brown coating; fetor of breath; presented appearance of a man quite ill. Lungs: Crepitant râle beneath left scapula, slight dullness over lower lobe. Right lung free from disease. Third day after entrance temperature dropped to 37.8° C., and the symptoms were ameliorated accordingly. Afternoon of that day dullness spread rapidly over whole left lung, and on June 2 the temperature reascended to 40.2. This marked the involvement of the right lung. Respiration now 40 and greatly embarrassed; pulse 140, but of good volume; mental condition stuporous throughout, with delirium toward the end. Notwithstanding the usual methods of stimulation, patient sank evidently from greatly embarrassed respiration.

Necropsy (*nine hours after death*).—Body that of a well-developed, muscular man, well nourished, weight about 160 pounds, height about 5 feet 8 inches, suggillation slight. Brain cavity not opened. Heart that of a strong man, weight 450 grams, normal; pericardium contains about 50 c. c. bloody serum, otherwise normal. Chicken-fat clots in heart, no post-mortem clots. Left perietal and visceral pleuræ almost generally adherent. Left lung solidified, red hepatization about to change to gray; weight 1,650 grams. Right pleuræ free from adhesions. Right lung weight 1,200 grams, in stage of red hepatization turning to gray. But little fluid in pleural sacs. Right kidney normal, weight 180 grams, left 170 grams. Liver congested, weight 2,320 grams. Alimentary canal normal. Bladder empty and contracted.

W. A. K.
H. W. S.

J. L.; aged, 35 years; nativity, Virginia; colored; admitted to the United States Marine Hospital, San Francisco, Cal., January 27, 1902; died January 28, 1902.

History.—Patient's sickness began the day before he was brought to the hospital, with vomiting and severe pain in his chest, cough, and expectoration of bloody mucus. This mucus contains large numbers of pneumococci. There is dullness over both lungs, but it can not be made out well on account of the noisy respiration. The vocal fremitus is increased over both lungs anteriorly and postoriorly. Loud, noisy râles are heard over the whole chest. There is extreme prostration, and the patient is extremely restless and has great dyspnœa. He became delirious during the night and died at 4.10 a. m., January 28, after expectorating a large amount of bloody mucus.

Necropsy (*six hours after death*).—Height, 180 cm.; anchor tattooed on right forearm; scars over middle of each tibia; rigor mortis well marked; abdominal wall 2 cm. thick; intestines, reddish gray; appendix, normal. The pericardium contains 50 c. c. of reddish fluid. Brain: Weight, 1,380 grams; measurements, 18 by 11 by 8 cm.; tissue, normal. Heart: Weight, 460 grams; measurements, 9 by 9½ by 6 cm. Both ventricles contain clotted blood. There is a yellow clot extending into the opening of the pulmonary artery. The thickness of the wall of the right ventricle is 0.75 cm., of left ventricle, 2 cm. The valves are normal. Left lung: Weight, 710 grams; measurements, 21 by 14 cm.; the lung is bound down by old adhesions to the diaphragm and posterior wall of chest; the lobes are also adherent to each other; the apex crepitates, but the base is hard and noncrepitant; the color is reddish gray; upon section frothy liquid exudes. Right lung: Measurements, 23 by 19 cm.; the tissue is the same color as the other lung; its condition is also the same; the apex crepitant, but the base hard and resistent to the knife. Spleen: Weight, 180 grams; measurements, 12 by 9 cm.; color, reddish brown; tissue normal. Right kidney: Weight, 130 grams; measurements, 11 by 6 by 3 cm.; cortical portion 0.5 cm. thick; color, red streaked with yellow. Left kidney: Weight, 137 grams; measurements, 11 by 6 by 3 cm.; tissue is in the same condition as the other kidney. Liver: Weight, 1,410 grams; measurements, 23 by 19 by 9 cm.; color, dark reddish yellow "nutmeg condition." The tissue cuts easily.

W. G. S.

C. W.; colored; age, 19; nativity, Missouri; admitted to United States Marine Hospital, Louisville, Ky., January 6, 1902; died January 11, 1902.

Present illness, which is patient's first, began as a hard chill on morning of January 4; chill lasted half an hour; a small respite of fifteen minutes was followed by a second chill and again by a third. Sharp pains so severe as to interfere with breathing began in left side, then in right, then in breast. Pain in side, shortness of breath and loss of appetite have continued up to present. Bowels have been loose and watery. At present has a severe cough. Expectoration is thick, yellowish and muco-purulent.

Physical examination.—Patient is young, rather slightly built negro. Patient lies on back or on left side. Breathing is rapid and at times assumes the Cheyne-Stokes character. Percussion reveals lessened resonance over right side, but it causes patient so much pain it is not persisted in. On auscultation, râles, crepitant and subcrepitant, are heard on right side. A friction murmur is also heard. Breathing at left apex is loud and puerile in type. Râles are heard over left base.

January 7.—Patient passed a restless night; cough is still severe. Sputa is the typical rusty colored of pneumonia, although a stained specimen failed to show the diplococcus lanceolatus.

January 8.—Patient's condition unchanged at morning sick call, but two hours later patient had a severe seizure of violent dyspnœa, during which failure of respiration seemed imminent, though under the stimulation of atropine, heroin, and brandy, given hypodermically he rallied nicely. About 4 p. m. had another attack, but of much less severity, which was treated and yielded as before. A specimen of urine examined at this time was found to be heavily albuminous. Was not examined microscopically.

January 10.—At morning sick call patient seemed to be doing nicely, but an hour later had a paroxysm of pain in left side, accompanied by severe dyspnœa. This was controlled by medication but from time to time attacks recurred. At 6 p. m. patient's breathing became noisy and stertorous, and steadily sinking he died at 10 a. m. January 11.

Necropsy (*twenty-four hours after death*).—Body of young negro male adult. No scars of special prominence on body. Head of subject is disproportionately small, forehead is low, and in addition the left frontal region is much flatter than right, giving the head a one-sided appearance. Rigor mortis is well marked. Usual incision is made from interclavicular notch to symphysis pubis, integument retracted and sternum removed. It is noted that lungs do not retract on opening the pleura. On opening pericardium about 100 c. c. of clear pericardial fluid escapes. Heart is normal in size, pale in color, and flabby. Right auricle distended; right ventricle contains a large mixed clot. Left auricle and ventricle empty. Valves all competent and normal except aortic, about orifice of which thickening has already begun, which is unusual in a subject of this age. Weight of heart, 315 grams. Right pleural cavity contained about 500 c. c. of clear fluid. Some recent adhesions at lower part of lung in front. Firm old adhesions at apex. Firm recent adhesions binding together the lobes and thus hiding middle lobe by obliterating the appearance of a sulcus. Lungs are pigmented considerably. The whole of right lung is consolidated, the upper and middle being in a state of gray-red hepatization, the lower in a state of grayish hepatization. Weight of right lung, 1,000 grams. The left pleural cavity contained about 200 c. c. of cloudy serum. Strong fibrinous bands at left apex. The upper lobe is crepitant, but seems small in area in comparison with the lower lobe, which is entirely consolidated. Lower lobe in state of red hepatization. Weight of left lung, 810 grams. Abdomen normal in appearance. Colon rather distended. Appendix normal. Spleen enlarged to about twice its size; weight, 180 grams. Kidneys slightly larger than usual, pale and flabby. Capsules strip off with ease. Cortex and medulla both very pale. Liver pale, soft, and flabby. Other organs not examined.

Diagnosis: Lobar pneumonia, complicated by acute nephritis.

G. B. Y.

J. S.; age, 27; nativity, Indiana; admitted to United States Marine Hospital, Louisville, Ky., January 11, 1902; died, January 19, 1902.

Patient has always had good health with the exception of recurrent attacks of tonsilitis. The last of these attacks occurred one month ago, at which time patient was treated in this hospital. At that time, although all the symptoms of quinsy were present, i. e., high fever, enlarged glands in neck, rigidity of the jaws, which latter could be pried slightly open with the greatest difficulty, yet inspection showed only a highly inflamed fauces, tonsils highly inflamed, but retracted. Numerous pits and large irregular cicatrices showing the result of previous inflammations. Although no pus foci were seen, each tonsil was incised in two or three places and bled freely. After this patient expressed himself as greatly relieved and immediately began to improve. Four or five days later when the jaws could be opened sufficiently an attempt was made to enucleate the tonsils, but they were so retracted that they could not be made to engage in the tonsilotome. In fact, the only way possible to have enucleated them would have been to dissect them out, and in view of their length, all their enlargement seeming to have been made in an up and down direction, and of the scar tissue from previous inflammations, would have been no easy operation nor one without danger to the patient. Nothing was done, therefore, and patient was allowed to go out. He reentered hospital on January 11 giving this history: That for last four days he had been feeling languid and depressed. This he attributed to a slight cough which he then had. That at midnight of January 10 he was awakened by a hard chill, followed by high fever. At the same time there set up a severe pain, worse on deep inspiration, in the left side of chest, lower part. The next morning patient felt still worse, fever was high, cough became annoying and painful. Patient tried to keep on feet, but was obliged to come to hospital in the afternoon.

Patient, a young negro man of medium stature. Patient lies on back in bed. Face seems somewhat swollen. Eyes reddened and watery. Respiration not rapid, about 25 a minute, but sometimes noisy from the rattle of loose mucus in throat. Percussion revealed comparative dullness over base of left lung. Auscultation over this locality revealed tubular breathing rales, crepitant and subcrepitant, and a friction rub.

Necropsy (*twelve hours after death*).—Body of adult male negro, of medium stature and of fair musculature. Rigor mortis well marked. Usual median incision made. Abdomen normal on inspection. Pericardial cavity opened and about 25 c. c. of clear pericardial fluid allowed to escape. Right auricle much distended, dark fluid blood in auricle and in large veins. Dark clot distending right ventricle and extending into pulmonary artery. Tricuspid and pulmonary valves normal. A dense antemortem clot in left ventricle, extending into aorta. Aortic and mitral valves normal. Weight of heart, 310 grams. Lungs do not retract on opening pleural sac of left lung. Recent light adhesions binding upper lobe near apex, both anterior and posterior. A dense mass of recent fibrinous adhesions binding down lower margin of left lung. No fluid in pleural cavity except that squeezed out of the thick fibrinous masses. Left lung crepitant in upper lobe, and partly so in lower lobe in front. Posterior part of lower lobe entirely consolidated. Lobes are adherent to each other by a sheet of organizing fibrin; sheet is thick on outer edge, but thin as it dips down into sulcus between lobes. Posteriorly there is a mass of the same material that is about the size of a lemon and separates the two lobes to the distance of 2 inches from each other and the parietal pleura. Section of the lower lobe shows it to be in a state of mixed hepatization. Weight of left lung, 560 grams. Right lung adherent at tip of apex, at lower margins, and at a point corresponding to nipple by tough though recent fibrinous adhesions. No fluid in cavity. Upper lobe crepitant throughout except a few lobules in posterior margin. Middle lobe entirely consolidated except for thin strip in front. Lower lobe partly crepitant. Lobes are adherent to each other by thick sheets of fibrin clot. On section middle lobe in a state of red hepatization. A pigmented scar size of a quarter on posterior surface of middle lobe. Lower lobe in a state of gray-red hepatization. Cut surface of bronchi exude a pus-like secretion, this lobe, as its fellow on opposite side, being in a state of partial resolution. Weight of right lung, 1,055 grams. Intestines rather distended; otherwise normal. Appendix about 6 inches in length; otherwise normal. Spleen normal in size; weight, 120 grams. Four supernumerary spleens ranging in size from that of a pigeon's egg to that of a walnut, in great omentum anterior to spleen. Kidneys rather pale in color and flabby in consistence. Weight of right, 245 grams; weight of left, 200 grams. Liver also pale; weight, 2,150 grams. Brain and other organs not examined.

G. B. Y.
T. D. B.

Pneumonia, lobar—Tubercular peritonitis.

M. F.; age, 23 years; nativity, Cape Verde Islands; admitted to United States Marine Hospital, port of San Francisco, Cal., July 17; died August 6, 1901.

History.—Patient's illness began three months prior to admission, with pain in the chest, weakness, cough, with expectoration of yellowish masses, loss of weight, nausea, and headache. On the day before admission patient coughed up blood. At time of admission patient was dyspnœic; the patient was emaciated; there was dullness over both apices and bases; resonance in left axillary line. Auscultation showed increase of vocal resonance and vesicular murmur over the areas of dullness. There was a diastolic murmur at the pulmonic area, and in this region the second sound was accentuated. The temperature was 39.8°. There had been no night sweats. The abdomen was negative. Within ten days the signs of pneumonia of the right lower lobe became more marked; large mucous râles could be heard over the bases of both lungs. On August 6 patient became very dyspnoeic, with a rapid, feeble pulse. He sank into a stupor and finally became unconscious, dying at 3.10 p. m. The temperature during the entire illness varied between 39° and 40°. Repeated examinations of the sputum gave the pneumococcus in large quantities. At no time was the bacillus of tuberculosis found in the sputum.

Treatment.—The treatment consisted of the application of jacket poultices, the use of expectorants, and stimulative and supportive administration of strychnine and whisky throughout the course of the illness.

Necropsy (*sixteen hours after death*).—Body of a young adult colored male; height, 5 feet 10 inches; weight, 125 pounds; much emaciated. Brain: Normal. Pericardium contains a small quantity of a bloody fluid and shows recent adhesions. Heart: Weight, 320 grams; valves competent by hydrostatic test. Left ventricle muscle hypertrophied. Aortic valve normal. Mitral slightly thickened; shows fibrous change. Fibrinous deposit along valve margins. Organized clots attached to papillary muscles. Right ventricle contains very large organized clot. Valves slightly fibrinous in appearance. Wall of ventricle dilated. Pleuræ contain 250 c. c. of a sanguineous fluid. Right lung: Weight, 700 grams; floats; adhesions thick and general. Apex on section, red, congested, studded with very fine miliary tubercles. Middle lobe shows grayish degeneration with purulent material in the bronchi. Base shows red hepatization. Left lung: Weight, 750 grams; floats. Upper lobe shows grayish degeneration and miliary tubercles. Lower lobe very much congested. Peritoneum entirely adherent and with the contained viscera covered with small miliary tubercles. Liver: Weight, 1,750 grams. Capsule adherent. Liver, pale; cuts with difficulty; smooth; margins hard. Pancreas hard; cuts with difficulty. Spleen: Weight, 250 grams; extremely congested. Left kidney: Weight, 200 grams; very hard, small cyst in lower part. Interstitial tissue much increased; capsule adherent. Right kidney: Weight, 220 grams; macroscopically similar to left kidney.

J. N. F.
C. W. V.

Lobular pneumonia.

M. H.; age, 28 years; nativity, Germany; admitted to the marine ward of the German Hospital at Philadelphia, Pa., July 22, 1901; died August 8, 1901.

History.—Ten days before admission patient fell overboard from vessel and was in the water for some time. Shortly afterwards had a chill, followed by fever, but continued to work. On admission had much difficulty in breathing, and coughed in paroxysms.

Physical examination revealed loud râles over entire chest, with impaired resonance and areas of consolidation. This condition increased progressively, and dyspnœa became very marked. Heart action became weaker day by day, despite stimulation, and death occurred from exhaustion August 8, 1901.

Necropsy (*five hours after death*).—Body is that of a fairly well nourished adult white male. Post-mortem rigidity, slight; lividity of dependent portions, slight.

The calvarium being removed, the brain case, sinuses, vessels, and membranes are normal. Brain: Normal; weight 1,450 grams. Thorax: Pericardium, normal. Heart: Normal; weight, 350 grams. Left pleura: Adhesions anteriorly and posteriorly. Right pleura shows the same condition. Left lung: Weight, 800 grams; color, mottled reddish gray; consistency, firm; air contents, slight; on section surface is granular and slightly crepitant. Right lung: Weight, 850 grams; color, mottled reddish gray; consistency, firm; air contents, slight; on section surface is granular and slightly crepitant. The bronchi are thickened and the mucous membrane congested. The great vessels and nerve trunks are normal. Abdomen: Omentum, normal; spleen, normal; weight, 135 grams. Right kidney: Weight, 170 grams; capsule, nonadherent; on section surface is smooth; consistency, firm; pyramids are increased in size, and pelvis congested. Left kidney: Weight, 170 grams; same condition found as in right; suprarenal capsules, normal. Bladder normal; contents urine. The remaining contents of the abdomen are normal. The spinal cord was not examined.

W. A. K.
H. W. A.

Pneumonia, lobar, right; pneumonia, interstitial, chronic.

H. P., white; age, 61 years; nativity, Ohio; was admitted to the United States marine hospital, St. Louis, Mo., on November 11, 1901, and died January 2, 1902.

History.—Ten days prior to admission he had been drinking heavily. Eight days ago was chilly, feverish, had pain in left shoulder and back. Bowels were very loose but now are "all right." Tongue is coated. Complains of cough. Sputum tenacious and slightly blood-tinged. Temperature on admission 38.8° C.; respiration, 43; pulse, 117. Right lung silent, except at apex. Left lung some râles. Pneumonia jacket applied. Put on salicylate of soda, receiving about 6 grams in twenty-four hours. Latter discontinued second day, as temperature dropped to normal. Quinine, whisky, and tonic treatment subsequently.

December 5, 1901.—Had severe chill about 5 p. m., followed by profuse sweat. Complains of nothing else. Lower lobes right lung solid; no evidences of resolution.

December 9, 1901.—Another chill, followed by temperature of 39.2° C., notwithstanding large doses of quinine.

December 18, 1901.—Numerous chills at irregular intervals. Thought to be due to resorption in unresolved lung. Put on carbonate of guaiacol. Sputum examined for tubercle bacilli, negative.

December 25, 1901.—Appetite failed.

December 30, 1901.—Taking but little nourishment; failed steadily. January 2, 1902, died 8.25 p. m.

Necropsy (eighteen hours after death).—Body that of an elderly white male, much emaciated; rigor mortis established; moderate suggillation; pupils evenly dilated; abdominal wall 1 cm. thick, fat scanty; both lungs, particularly the right, adherent to chest walls, rendering removal exceedingly difficult; liver extends a hand's breadth below margin of ribs; lungs highly pigmented; right lung can not be removed. In attempting to break up the adhesions they are firmer than the lung tissue and resist separation, while the latter ruptures. Left lung weighs 600 grams, pigmented throughout. A recent brownish exudate covers external posterior surface and anterior inferior surface of superior lobe; crepitates on pressure; floats. On section inferior lobe shows gray hepatization; superior lobe a recent congestion; right lung darker and firmer than left; brain weighs 1,350 grams, somewhat anæmic, otherwise normal; heart weighs 450 grams; aorta, 4 cm. diameter; pulmonary artery enlarged; pericardium contains free fluid; left ventricular wall 2 cm. thick; recent clot in left ventricle; mitral valve admits three fingers; right ventricular wall 0.75 cm. thick; liver weighs 2,150 grams, apparently normal; left lobe adherent superiorly to diaphragm; gall bladder fairly large, full of viscid, pale bile; spleen extremely large, mottled, upper half containing about 125 c. c. of a wine-colored fluid, encysted, wall of cavity broken down, presenting a jelly-like appearance; indurated line of demarcation pronounced, separating degenerated from normal splenic tissue; lower portion of spleen paler than upper; weight of spleen, empty, 650 grams; left kidney weighs 180 grams; cortex, 2 cm. thick; length, 14 cm.; pale; capsule nonadherent; right kidney similar to left; weight, 160 grams; length, 12 cm.; cortex 2 cm. thick; appendix normal; bladder moderately full; urethra pervious; feces in rectum; other organs normal.

J. M. H.
J. M. G.

Pneumonia, lobar.

J. J., negro; age, 55; nativity, United States; admitted to marine hospital, Mobile, Ala., December 28, 1901; died January 4, 1902.

Was first admitted for contusion of back. On morning of 31st, temperature 38.2, pulse 98; evening temperature 39.3, pulse 100. The diagnosis of pneumonia was made; the disease pursued a violent course, did not yield to treatment, and patient died on fourth day of the attack.

Necropsy (*five hours after death*).—The body is that of a medium size, muscular colored man, about 55 years of age; no discoloration of skin; cicatrix over right parietal bone, also on each knee; rigor mortis moderate; eyelids closed; pupils dilated to full extent. The body is opened by long incision from the chin to the pubes; the diaphragm is attached between eighth and ninth ribs; the pericardium is somewhat thickened and contains about 8 c. c. of fluid; the heart is much hypertrophied and is very red; the right auricle is much dilated and contains an ante-mortem clot; the semilunar valves are thickened; the water test shows both the semilunar valves to be incompetent; heart's weight 450 grams. The left lung is œdematous and weighs 500 grams. On section lower lobe of right lung is in a state of gray hepatization, weight 1,150 grams. The large vessels of the neck are filled with dark blood; the larynx is congested, and is covered with sticky mucus; the vocal chords are slightly thickened; the aorta contains a small quantity of dark blood; the spleen is hypertrophied, is bluish black in color and pulpy, weight 290 grams. The capsule of the left kidney peels with great difficulty and tears on removal; a cyst is in the hilum about the size of a hazelnut; also one in the substance; the kidney is undergoing granular degeneration and its weight is 180 grams. The left suprarenal capsule is larger than normal. Its weight is 15 grams. In the right kidney is a slight effusion of blood; it is undergoing granular degeneration; the capsule peels with difficulty and tears; demarcation between the cortical and medullary substance is almost obliterated; both kidneys are hammer-shaped. The urinary bladder contains a small amount of urine. The stomach is covered with sticky mucus and its coats are slightly congested. The liver is dark brown in color and bleeds easily on section; is much congested and is easily torn; its weight is 2,090 grams. The gall bladder is very small and contains little fluid. The pancreas weighs 90 grams. The intestines are apparently normal. The appendix is long, bound down, and is twisted upon itself. The spinal cord and the brain were not examined.

Cause of death, lobar pneumonia.

W. P. M.

J. D., age, 34 years; nativity, Germany; weight, about 195 pounds; height, 5 feet 10 inches; admitted to United States marine hospital, port of New York, N. Y., September 10, 1901.

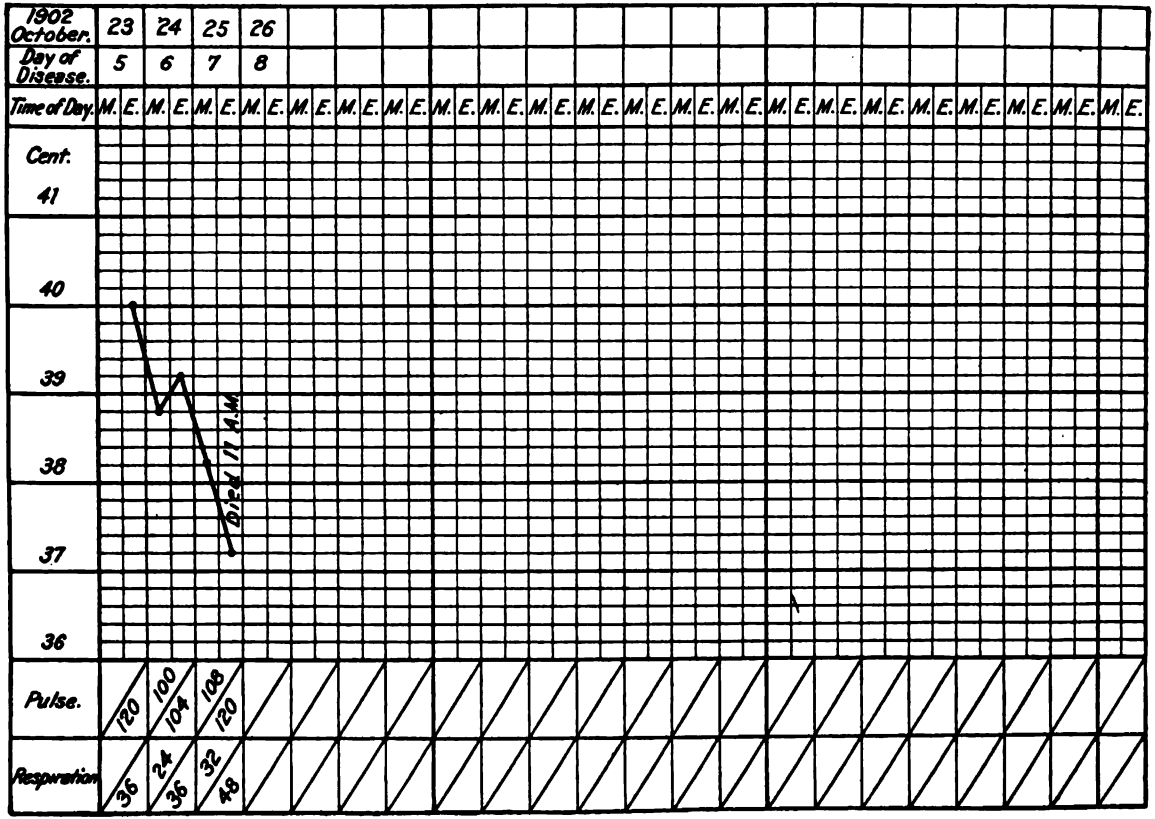
Patient entered in the ambulance and his condition was such as to prevent obtaining much information in regard to his previous history. Had suffered much from rheumatism, notably an attack about a year ago, which left him with a severe pain in his heart which has been constant ever since.

Present illness began on September 9, 1901; was taken while at work with a sudden chill and sharp pain in his left side. He at once quit working and was brought to the hospital. Examination shows consolidation of the left lung at base and middle lobe, and a loud, angry diastolic (?) murmur at the apex of heart. Rapid breathing and the condition of the patient prevented satisfactory examination. From date of admission to September 17 his temperature ranged between 39° and 40° C. The chief symptoms during this time were painful cough, rapid respiration, and blood-tinged sputum, free in amount, and contained the pneumococcus in large numbers. On September 16 the consolidation had apparently lessened, for the breathing became easier, and breath sounds were more tubular in character, and crepitant râles were plentiful. On September 18, and the ninth day of his disease, the temperature fell to 37.6°. His general condition seemed much better. On the 19th the patient had a severe chill, rapidly followed by another later in the day. The chills were accompanied by profuse sweats, the temperature was 40° to 41° C., and he complained of great pain in his heart. From this date the fever was between 41° and 37° C. at various times. Chills were frequent, accompanied by debilitating sweats, pulse gradually became weaker, emaciation marked, and his condition steadily grew worse. The heart sounds, at first loud and angry, became softer, and finally irregular, and the patient died on October 5, 1901. The sputum was repeatedly examined and showed at all times large numbers of streptococci, pneumococci and other bacteria but no tubercle bacilli.

Necropsy (*sixteen hours after death*).—Rigor mortis well marked. Subcutaneous tissue in abdomen was fairly well marked but elsewhere was scant. Anterior mediastinum

U. S. MARINE HOSPITAL, PORT OF ST. LOUIS, MO.

Name, E. B.; age, 50 years; disease, pneumonia, lobar, right.



normal. Left pleural cavity contains large quantity of fluid, and the parietal layer of left pleura was greatly inflamed throughout all portions. No adhesions between lung and chest wall. Left lung; middle lobe, on cut section shows a dirty, yellow color, contains slight amount of air and is in a state of gray hepatization. The lower lobe of the left lung is dark red in color, firm to the touch, does not crepitate, sinks in water, and is in a state of red hepitization. The pleural surface of the lung is dull in appearance, and flakes of fibrin are present. Right pleural cavity contains excess of fluid. No adhesions between lung and chest wall. Right pleura was inflamed, but not to the extent of the left. Upper lobe of right lung on cut section exudes a frothy mucous, but crepitates. The middle lobe presents the same picture, except that it is whiter in appearance. The lower lobe is dark red in color, contains air, and is in a state of engorgement. Pericardial sac contains a large amount of fluid, it being impossible to accurately determine the amount. The pericardial sac was normal in appearance, smooth and glistening, and no adhesions between it and the heart. Heart opened in situ. Right side was dilated, and filled with fluid blood. Valves on this side normal. The left ventricle was dilated, and filled with clotted blood. The mitral valve barely admits the end of the little finger. On dividing the value it is seen to be almost entirely replaced by vegetations. They extend along the entire length of the cusps, save at one small point in the center, and this point seems to be the only place for the blood to pass through. The vegetations seem to be partly old, partly recent, distinctly laminated, and very dark in color. They are three-fourths of an inch in thickness, and extend into the cavity of the ventricle. Smears from the cut surface show blood corpuscles, blood coloring matter, and detritus of disintegrated cellular tissue. No bacteria were found. The walls of the left ventricle were greatly hypertrophied, and showed evidence of acute myocarditis. Weight of heart, 611 grams; weight of left lung, 1,200 grams; weight of right lung, 823 grams. Liver presents nothing of importance except that it is congested. Weight, 2,473 grams. Right kidney has an area of dark discoloration, involving its lower extremity; over this portion the capsule strips easily; cut section shows a triangular area, whitish in color; weight, 270 grams. Left kidney presents an area of discoloration, similar to that in the other organ, only much larger; cut section shows a triangular area, white in color; the markings in both kidneys were fairly distinct, except in the localities involved by the infarcts; weight, 228 grams. The spleen showed externally an area about 3 inches in diameter, of a dark, almost black, color; the cut surface of this area shows necrosis of the splenic substance, triangular in shape; the organ was not weighed. Pancreas normal. Intestines present nothing of interest. Calvarium not removed.

P. H. B.

Lobar pneumonia; chronic nephritis.

F. B.; age, 50 years; nativity, Missouri; admitted to United States marine hospital, St. Louis, Mo., October 23, and died October 26, 1901.

History.—On admission patient was in collapse. He insisted he had been perfectly well to within four days and had continued work until two days before admission. Cough not pronounced. Sputum tenacious, nummular; respiration 36, shallow; pulse 120, feeble; temperature 40° C.; dyspœna marked. Respiratory murmur abolished over superior and middle lobes, and bubbling rales heard over right inferior lobe in front. No sound recognizable at back. Left lung apparently clear, though breathing labored. Heart sounds obscure; constipated. Patient was weak and disinclined to talk. Examination of urine showed albumin in quantity. A hot bath with a gentle mercurial laxative were given with milk diet, salicylate of soda and externally turpentine stupes. His symptoms ameliorated, expectoration became freer and pulse and temperature fell to 108 and 37.2° C. by evening of October 25. About sick call of 26th he became comatose, and despite hypodermatic medication of strychnine, atropine, and digitaline, with whisky and external warmth, died at 11 a. m.

Necropsy (*four hours after death*).—Body that of a muscular, well nourished, though small mulatto, adult male. Rigor mortis marked. No discoloration. Connective tissue extremely dense. Abdominal subcutaneous fat plentiful. Anterior mediastinum normal. Left pleura normal. Lungs thickly pigmented externally, left, weight, 350 grams; congested; floats; right, weight, 1,080 grams; superior and middle lobes completely hepatized, breaking down and exuding pus on section; inferior lobe congested; lung floats. Right pleura filled with fluid, thin pus. Pericardium showing signs of previous inflammation. Heart small, flabby, somewhat fatty; coronary arteries distended; heart muscle very red; left ventricle greatly hypertrophied concentrically; aortic valve area constricted; ventricle full of well-organized chicken-fat clot, entangled in aortic valve; other valves apparently normal. Liver smooth;

pigmented in spots; very firm and resistent to knife. Gall bladder small and nearly empty; weight, 1,100 grams. Kidneys small, notably devoid of fat; somewhat contracted; capsules closely adherent, on section, presenting no gross appearance of interest; weight, right, 130 grams; left, 135. Spleen: Friable, currant-jelly-like; weight, 180 grams. Pancreas very firm, almost cartilaginous; weight, 60 grams. Other viscera apparently normal, except alimentary tract showing alcoholic irritation, and a tight stricture of urethra near prostatic portion. Brain congested. Along vertex on both sides median fissure are frequent patches of exudatory products; weight, 1,250 grams. A decided odor of alcohol pervaded all the viscera.

J. M. G.

Lobar pneumonia.

M. F. R.; age, 49 years; nativity, England; admitted to the United States marine hospital, Cleveland, Ohio, November 14; died November 21, 1901.

History.—Patient had never been sick before. Five days before admission to the hospital he had a sharp pain in the right side and also in the head, accompanied by a chill. Shortly after he began to cough.

On examination the following conditions were found: Temperature was 38.6° C.; face is flushed, breathing rapid and difficult. On palpation vocal fremitus was increased over upper lobe of right lung with dullness on percussion. On auscultation numerous dry rales were heard with bronchial breathing. Pleural friction sounds were heard over the right side, both anteriorly and posteriorly, and also on left side. Sputum was small in amount, very tenacious, and of a slightly rusty color. Pulse was regular, weak, and rapid. Heart sounds were weak and indistinct. Tongue was coated with a brownish fur; bowels were constipated and appetite poor. Toward the last the temperature decreased, while the pulse increased in rapidity and became very feeble. Breathing became hurried and superficial and patient died November 21, 1901.

Necropsy (thirty-seven hours after death).—Body that of an adult of large build; muscles well developed; moderate amount of subcutaneous fat; rigor mortis present throughout; post-mortem lividity present over dependent parts. Scar over right tibia of brownish color, about 3 by 8 cm. in size. Thorax: Position of thoracic organs was normal. Pleura was adherent over entire surface with fresh bands of adhesions, which were easily torn. Pleural cavity was filled with about 800 cc. of fluid containing fibrin. Over the entire surface of left lung was a coat of fibrin about 1.5 cm. in thickness. Pericardium was adherent, contained about 100 cc. of purulent material with flakes of fibrin. Heart was much enlarged, circumfrence, 29 cm.; length, 17 cm.; breadth, 12 cm.; thickness, 9.5 cm. Auricles were dilated. Right ventricle filled with jelly clots; wall of right ventricle 1 cm. in thickness. Right auricle filled with dark red clots. Left ventricle wall 2 cm. in thickness, filled with jelly clots. Wall of left auricle 0.5 cm. in thickness. There was a slight thickening of mitral valve. Other valves were normal. Left lung: Weight, 750 grams; lower lobe was collapsed; upper lobe was very much congested; on section it drips with blood. Bronchi are filled with blood; surface shows large amount of anthracosis. Right lung: Upper lobe was solid, of a grayish color, with considerable anthracosis. Lower lobe of right lung was firm and airless; on section it was dark red. Bronchi were filled with red plugs. Weight of right lung was 1,570 grams. Pulmonary vessels were filled with clotted blood. Large bronchi were empty; small bronchi filled with exudate. Bronchial glands were pigmented. Aorta and thoracic duct were normal. Abdomen was greatly distended. Omentum contained a moderate amount of fat. Spleen weighed 120 grams. Capsule was wrinkled and easily stripped off; on section was dark red; stroma normal. Adrenals were degenerated. Left kidney weighed 225 grams. Fibrous capsule easily stripped off; fatty capsule increased. Hemorrhagic infarct on surface of left kidney 3 by 3 cm. in size. Cut surface of kidney normal. Right kidney weighed 195 grams, otherwise same as left, on section normal. Duodenum was distended; bile passages open. Stomach was distended with gas; contained grayish semisolid chyme. Small intestine was distended; contained yellowish feces. Appendix was about 9 cm. in length; 3 cm. from the end was a band constricting the appendix, which was adherent to the abdominal wall. Large intestine was distended with gas; contained yellowish semisolid feces. Rectum normal. Liver: Weight, 2,250 grams; mottled on surface; cut surface shows considerable blood. Gall bladder filled with dark-green bile. Pancreas, normal. Mesentery contained large amount of fat.

Microscopical examination.—Upper lobe of right lung showed alveoli entirely filled with fibrin, large numbers of leucocytes and red blood cells. Some of the leucocytes contain brownish pigment. Moderate amount of anthracosis. Pleura thickened with heavy layer of fibrin on outer surface. Majority of blood vessels are dilated and filled with blood. Lower lobe of right lung: In this section alveoli contained more red cells and less leucocytes than upper lobe. Left upper lobe: Blood vessels are greatly enlarged and filled with blood; small amount of fibrin in alveoli, with few red cells and leucocytes. Pleura thickened with large layer of fibrin on outer surface. Large amount of blood pigment—hemasiderin—around the blood vessels. Lower lobe of left lung is partially collapsed; shows small amount of fibrin in alveoli. Pleura thickened; some of bronchi are filled with fibrin and desquamated cells. Liver is greatly congested, with large amount of hematoidin around central veins. Kidneys: Blood vessels dilated and filled with blood; shows hemorrhage into substance of cortex. Many of tubules filled with blood casts; right kidney shows cloudy swelling, but not in left. Spleen: Contains large amount of blood pigment.

W. J. P.
A. D. F.
R. F. K.

CANCER, SECONDARY OF LIVER; ANEURISM OF AORTA INTO LEFT AURICLE.

J. P.; age, 60; nativity, Kentucky; admitted to United States Marine Hospital, Louisville, Ky., February 8, 1902; died February 10, 1902.

Patient states that he has always enjoyed good health; that his only sickness was twenty years ago at which time he was treated in this hospital for pleurisy; was in the hospital one month.

Patient is a roustabout by occupation and worked steadily up to the time he was taken sick three days ago. At that time a pain in his left side set up. This pain was worse on coughing and deep inspirations. Patient worked the first day of the pain hoping to wear it off; then, his boat being laid up because of the ice, he went home; pain persisted, however, and last night about 6 p. m. was seized by a severe rigor. Rigor lasted one hour and was followed by a drenching sweat. Patient passed a restless night, sleep being broken because the pain in the side had become agonizing. About 6 o'clock in the morning patient was seized by another rigor. As soon as this rigor had passed off sufficiently patient walked a block and took a car, and as the weather was cold, he was severely chilled, and at this hour, 1 p. m., has not regained a feeling of warmth.

Physical examination.—Patient is a man passed middle age, though robust looking. The temporal arteries are pulsating visibly and are fibrous to the touch. Patient lies on back inclining to the left side. Respirations, 35 a minute, and interrupted by frequent half-suppressed coughs. Sputa is yellowish-white but very sticky. The thorax of patient is well formed, but breathing is almost purely abdominal. Palpation: Vocal fremitus increased on left side posteriorly. Percussion: Dullness over lower half left lung posteriorly. Auscultation: High pitched breathing over upper lobe of left lung and over right lung. Crepitant and subcrepitant rales over lower lobe of left lung. Bronchophony is also elicited over lower lobe posteriorly. Heart sounds rapid but no murmur noted.

Diagnosis: Pneumonia, lower lobe of left lung.

February 9.—Temperature lower, is now 38°; pulse, 111; respirations (sleeping), 27, and of good depth. Facies, however, not good, and some tympanites is present. At 9 p. m. condition is practically unchanged except that temperature slowly declines.

February 10.—About 6 a. m. patient had a profuse hemorrhage, blood apparently arterial. Had several smaller ones afterwards and died about 10.30 a. m.

Necropsy (thirty hours after death).—Body of an adult male negro. Body fairly well nourished. Rigor mortis still marked. Usual median incision made, muscles of thorax and abdomen are large and thick. About 20 c. c. of clear, straw-colored pericardial fluid in sac. Heart is enlarged. Walls of right ventricle are yellowish, and are the seat of several milk spots. Ante-mortem clots in aorta, pulmonary artery, and in left auricle, mixed clot in right auricle. The ascending portion of arch of aorta is dilated; there are also several atheromatous plaques in the wall. A small sacculated aneurism, with a constricted neck, projects from beginning of aorta into left auricle. The aneurism is jug shaped and about the size of a walnut. The wall is tough and parchment like. The aneurism contains no clot except a very thin lamella of old red clot next to its wall. The anterior coronary arteries are also atheromatous, and in some spots are calcareous to the touch. The valves all seem competent. Both ventricles are thicker than normal, especially the left. Weight of heart, 420 grams. The right lung is crepitant throughout but adherent at base by strong old adhesions. A few spots of congestion posteriorly. The right lung is much compressed, and displaced by an enlargement of the liver upward, which rises dome-like into the thorax as high as lower border of fourth rib. Behind, however, the lung reaches to its usual limits, but is thinned as it dips down behind the enlarged liver. Weight of right lung, 620 grams. Left lung is adherent nearly everywhere by recent yellow fibrinous adhesions, which when torn loose give lung a shaggy appearance; recent adhesions also binding lobes to each other. Both lobes totally consolidated in a state of red hepatization. Weight of left lung, 1,030 grams. The origin of the hemorrhage was sought for in the lung by following up the larger bronchi, but without success. Attention was then turned to abdomen, and after noting that the appendix which was quite long was bound down at its tip by an old tough adhesion, the abdominal organs were removed en masse. The esophagus which was distended pouch-like with blood was tied and cut across; also the sigmoid, which like the rest of the intestines was empty. The spleen was dissected loose from some rather strong adhesions and observed. It was quite large, weighing 475 grams, and dark in color, and rather firm in consistence, showing that the enlargement was not a recent one; was probably a malarial spleen at one time. The kidneys were normal in appearance, their capsules stripped off easily, and they were only slightly cirrhotic, if any, on section, which, in view of the fact that patient has been a heavy drinker all his life and of the atheroma about blood vessels in other situations, is rather remarkable. Weight of kidneys, 170 grams each. Stomach and duodenum were tied off and weighed; they contained 1,200 grams of blood and clot. There was at least 300 grams more in the esophagus. Stomach was somewhat congested on posterior aspect, otherwise normal. No new growth in either stomach or duodenum; no ulcer or open blood vessel could be seen in wall of stomach. Pancreas and rest of intestines were apparently normal. Liver was next freed from other tissues and observed. It was uniformly enlarged to about twice normal size. The enlargement was due to the fact that the liver was a mass of cancer nodules. These nodules varied in size from that of a small shot to that of a hickory nut, and so thickly set and crowded on each other that no normal liver tissue could be observed. The liver may have been the seat of the primary cancer also, as the latter was not found elsewhere. The gall bladder was distended to about twice its normal size. No gallstones were in it or in the ducts. The brain was next taken out; it was normal in appearance. The depressed fracture of skull previously noted was found to have extended through only the outer table of the skull, the inner table and dura not being affected.

T. D. B.
G. B. Y.

TUBERCULOSIS.

M. C.; age, 25; nativity, Spain; color, white; admitted to United States Marine Hospital, Fort Stanton, N. Mex., December 7, 1901; died April 30, 1902.

Previous history.—(Taken from clinical notes of medical officer in command, San Francisco.) Mother died of consumption. No other sicknesses except gonorrhea some years ago. Present disease began in September, 1901, with cold, followed by cough, expectoration, night sweats, hemorrhage, fever, and loss of weight. Admitted to hospital October 9, 1901. Physical condition as follows: Some emaciation; liver enlarged and tender; diaphragmatic breathing; increased vocal fremitus, dullness, and bronchial breathing in right upper lobe with prolonged expiration in base; roughened breathing in left upper lobe and prolonged expiration in base. "No tubercle bacilli have been found in this man's sputum. The sputum has been small in quantity. The hemorrhage from the lungs and the temperature, pulse, and respiration all indicate that he is suffering from tuberculosis." (Signed)

W. G. S.

On the patient's arrival at Fort Stanton the following were observed: Typical facies and nails; increased vocal fremitus on right side and left cervical glands enlarged; dullness in right apex, crackling râles, and friction sounds throughout right lung, and same in left upper lobe. Tenderness under margin of ribs on right side, and also on left side posteriorly. Throat became very painful and dysphagia and aphonia resulted. Dyspnœa increased and the temperature invariably became very high during afternoon and evening, even when kept out of doors in a tent. This case followed the usual course of such grave ones and death occurred April 29, 1902. This was a most serious case on arrival here, and scarcely any hope was ever entertained that he might recover or become an arrested case.

Necropsy.—Some emaciation, but a moderate amount of subcutaneous fat present. Moderate rigor mortis and post-mortem lividity. The calvarium not removed.

Throat: Mucous membrane of larynx studded with minute tubercles. Vocal cords eroded, thickened, contracted, and nodular. Epiglottis ulcerated at the tip. Œsophagus: Presented a small ulcer of the mucous membrane about 2 c. m. from the upper extremity. Thorax: The anterior mediastinum contained enlarged lymph glands. The lungs do not meet in the median line, being much retracted. The thymus gland is not demonstrable. The heart is enlarged. The right is dilated and contains adherent ante-mortem clots. The left ventricle is hypertrophied and contains dark post-mortem clots. Post-mortem clots are present in the aorta and pulmonary arteries. The tricuspid orifice admits five fingers, and the mitral three finger tips. The pulmonary valves are incompetent to the water test. The pericardium contains about 150 c. c. of clear straw-colored fluid, and is adherent to the left lung. Right pleural cavity obliterated by fibrous adhesions; left same superiorly, with fibrinous adhesions below. The lungs are so bound down that they can only be removed in pieces, and are therefore left in situ. Abdomen: Omentum contained a small amount of fat. Spleen much enlarged and softened, the Malpighian bodies showing prominently on cut section, which is very bloody. Kidneys enlarged; capsules strip easily; cortical markings indistinct; bloody on cut section, which shows in cortex and medulla several small, yellowish, caseous nodules. The suprarenal capsules, urinary bladder, organs of generation, rectum, duodenum, stomach, and gall ducts are normal. The liver is much enlarged, cuts with increased resistence, and shows center of lobules to be darker than periphery. Strong adhesions between liver and diaphragm posteriorly and latterally. Increase of connective tissue and bloody on section. The pancreas and solar plexus negative. The mesentery contains enlarged and caseous lymph glands. The small intestines negative. The large intestines contain much hardened fecal matter. The vermiform appendix negative. The great vessels negative.

Anatomical diagnosis: Tubercular laryngitis, ulcer of œsophagus, tubercular lymphadenitis, cardiac hypertrophy and dilatation, tricuspid insufficiency, pulmonary insufficiency, pericarditis with effusion, chronic pleuritis, chronic pulmonary tuberculosis, passive congestion of spleen, passive congestion and tuberculosis of kidneys, passive congestion and fibrosis of liver.

C. R.
P. M. C.

W. M.; age, 23; nativity, North Carolina; color, black; admitted to United States Marine Hospital, Fort Stanton, N. Mex., September 20, 1900; discharged, improved, June 26, 1901; readmitted November 1, 1901; died December 11, 1901.

Previous history.—(Taken from clinical notes of medical officer in command, Baltimore). Family history negative. No other diseases. Present sickness began in December, 1898, attended and followed by hemorrhage, cough, and expectoration. Admitted to United States Marine Hospital July 19, 1900, where examination revealed râles in each apex, dullness in right, and many tubercle bacilli in the sputum.

Physical condition on arrival at Fort Stanton was noted as follows: General appearance fair, curved nails, diminished movement of left chest, enlarged cervical glands, increased vocal fremitus, and dullness in right apex; tone of right lung generally higher, with crackling râles in upper half and cogwheel respiration and friction sounds in base, râles in left apex and friction sounds and cogwheel respiration in base and other portions, and tubercle bacilli in the sputum. The patient improved considerably and was employed for a time on the place. By his own request and against advice he was discharged June 26, 1901. He was readmitted November 1, 1901, and was then a very grave case, showing the following: Dyspnœa, dullness in right upper lobe, bronchial breathing from apex to nipple, with few râles, crackling râles in left lung from apex to base anteriorly and roughened breathing posteriorly, rapid heart action, throat very sore and voice hoarse, persistent diarrhea, emaciation, and albuminuria. For a short time after admission he rallied, but soon lost what had been gained. General dropsy supervened and all symptoms increased in severity until death occurred, December 11, 1901. This case is a fair illustration of what may be expected where patients leave the sanatorium against advice and are afterwards readmitted.

Necropsy.—Body fairly well developed, subcutaneous fat slight, rigor mortis and post-mortem lividity, œdema of subcutaneous tissue, face and eyelids puffy. The calvarium not removed. Thorax: The anterior mediastinum shows enlarged and caseous lymph glands. The thymus gland is not demonstrable. The peribronchial lymph glands are enlarged and caseous. The heart is broad laterally, the apex being made up of the right ventricle. The right auricle is dilated and contains an adherent ante-mortem clot which does not show organization. The left auricle is normal. The aortic and pulmonary valves are competent. The tricuspid valve admits five fingers loosely. The mitral valve admits three finger tips loosely. The myocardium of the right ventricle is increased, but the ventricular wall is thin at the apex. The mitral valve is shortened and thickened, but smooth. The myocardium of the left ventricle is slightly hypertrophied. The beginning of the aorta and pulmonary artery show raised yellowish plaques, most prominent at the beginning of the coronary arteries. About 1 cm. from the beginning of the left coronary artery occurs a raised yellowish calcareous plaque. There is some fibrosis of the interventricular septum. The myocardium of the heart is smooth, except that of the right auricle. The pericardial cavity is filled with clear, straw-colored fluid. The lungs do not meet in the median line. On removal of the sternum the middle lobe of the right lung is seen to have been adherent to it. At the point of the internal border of the lower lobe and the diaphragm the pleura is greatly thickened, forming an opening leading to the base of the lung. The right lung is emphysematous at the lower internal border, crepitates faintly, and contains tuberculous nodules up to hazelnut size. The internal border of the left lung is emphysematous, and the lung is soggy and dark purple in color at its posterior border. Yellowish caseous nodules of varying sizes are present throughout the lung, which is bloody and crepitates faintly. The apex contains a cavity of hen's egg size. Other cavities size of a pea occur in the upper lobe. The right pleural cavity is obliterated by fibrous adhesions, and the right lung is adherent to the pericardium internally. The visceral pleura is much thickened. The layers of the left pleura are free except at the apex, where fibrous adhesions exist. The inferior and superior vena cavæ contain dark, semiclotted blood. The nerve trunks are normal. The diaphragm is adherent to the right base, and between the two exists the sinus-like opening before described.

Abdomen: The omentum is small, retracted, and contains no fat. The peritoneal cavity contains a considerable amount of clear, straw-colored fluid. The spleen is large, slate color, slightly adherent at its posterior border, and wrinkles easily. The fœtal notches are not prominent. A small supernumerary spleen is present near the tail of the pancreas. The kidneys are enlarged and surrounded by a small amount of fat. They are smooth externally, and the capsules strip readily. The stellate veins are injected. The renal substance is bloody, the parenchyma increased, and the cortical markings indistinct. The supra-renal capsules, urinary bladder, organs of generation, rectum and duodenum, stomach and gall ducts are normal. The liver is free all over, is enlarged, smooth externally, and shows capsular fibrosis, especially around the blood vessels of the right lobe. The cut section is bloody, and there is increased resistance. The centers of the lobules are darker than their peripheries. The fibrous tissue of the portal spaces is increased, especially at the lower free border, beneath the areas of capsular cirrhosis. The gall bladder is small, but not adherent. The pancreas and solar plexus normal. The mesenteric and retroperitoneal lymph glands are enlarged. The small and enlarged intestines, vermiform appendix, and great vessels are normal.

Anatomical diagnosis: Cardiac vegetations, cardiac hypertrophy and dilatation, chronic pulmonary tuberculosis, chronic pleuritis, tricuspid insufficiency, aortic arterio-sclerosis, passive congestion of kidneys and liver, Glissonian cirrhosis of liver.

H. K. P.
P. M. C.

H. B.; age, 53; nativity, Maine; color, white; admitted to United States Marine Hospital, Fort Stanton, N. Mex., May 28, 1901; died January 17, 1902.

Previous history (taken from clinical notes of medical officer in command, Baltimore).—Transferred from Norfolk Station and admitted Baltimore April 20, 1901. No family history given. History of chronic bronchitis for some time previous. Believed to have tubercle. Later, tubercle bacilli found in the sputum. Some rise of temperature during afternoons.

Physical examination made at Fort Stanton elicited diminished movement and some wasting of the muscles of the left chest, dullness in left apex, tubular breathing in left upper lobe and a few moist râles about junction of lobes, and tubercle bacilli in the sputum. Some pain in left lung when breathing. Urinalysis negative. The patient improved rapidly, and, at his own request, was employed as attendant. September 10, 1901, a rather severe hemorrhage was experienced, and the sputum continued to be streaked with blood until the following day. Was laid off during this time. Some time later he was given leave to go to Capitan, and while there got drunk and continued on a spree for several days. After recovering from the effects of the spree he returned again to work, but was obliged to give it up very soon. Digestive disturbances became very troublesome, with pain in the abdomen. Examination revealed tenderness, but no enlargement of the liver. Dyspnœa became more and more severe, and nausea was present all the time. Urinalysis discovered the presence of albumin and casts. December 6 examination of the lungs showed that a change for the worse had occurred, and that hypostatic congestion was present in both bases. January 8 another hemorrhage was experienced. Always constipated.

Dropsy occurred and increased steadily, involving scrotum and penis also. During the morning of January 17, Cheyne-Stokes respiration developed and lasted for some hours. A distinct left hemiplegia also occurred, with coldness and weaker pulse on that side. Was delirious and talked incoherently. Death occurred at 11.20 p. m.

Necropsy.—Body shows œdema of lower extremities, back, face, penis, and scrotum. Face and neck cyanotic. Well-marked rigor mortis and post-mortem lividity. Brain: Calvarium removed. Superior longitudinal and lateral sinuses are all injected and filled with dark fluid blood. The base of the brain is bathed in fluid blood. The superior temporo-sphenoidal fissure and convolutions on each side are greatly infiltrated with dark fluid blood. The fissures principally involved are the superior temporo-sphenoidal, middle and inferior temporo-sphenoidal. The lateral ventricles contain a small amount of clear straw-colored fluid. The island of Reil is profoundly affected. The convolutions surrounding it are somewhat affected, as are also the caudate nucleus for a distance of 4 cm., the lenticular nucleus and the internal capsule anteriorly. The middle cerebral vessels are ruptured. The cerebellum and the pons are negative. Thorax: Subcutaneous fat present in large amount and greatly infiltrated with serous fluid. The lungs do not meet in the median line. The thymus gland is not demonstrable. The pericardial sac contains a small amount of clear straw-colored fluid. The parietal pericardium, especially that portion covering the right heart, is roughened, thickened, and has lost its glistening appearance, and in many places there are layers of fibrous material. The visceral pericardium, especially that portion covering the right auricle, is reddened, dull, and lusterless. The coronary arteries are injected and swollen, and their arterioles are plainly visible. The heart is broadened laterally. The aorta and pulmonary artery contain dark semifluid blood clots, and their valves are competent to the water test. The mitral valve admits four finger tips loosely. The right auricle is almost filled with grayish-black adherent vegetations. At several points this mass shows softening. These separate with difficulty, leaving the endocardium roughened. The right ventricle contains loose yellowish clots, easily separated. The tricuspid valve contains a few areas of fibrosis and is retracted. The myocardium of the right heart is increased. The left auricle contains a small and blackish clot. The left ventricle contains a large, partially organized adherent clot of hen's egg size. The endocardium beneath the deposit is roughened, reddened, and injected. The remainder of the endocardium is smooth and apparently normal. At the beginning of the aorta are seen a few small atheromatous patches. There is a considerable deposit of fat beneath the visceral pericardium. The left coronary artery, about 2½ cm. from its beginning, shows a lengthened calcareous plaque, and immediately below it a smaller one. The interior of the right coronary artery is smooth and normal. The myocardium of the left ventricle is increased and is dark brown on section, and contains increase of fibrous tissue. The pleuræ are thickened, leathery, and strongly adherent to the lungs in the median line. The right pleural cavity is filled with clear straw-colored fluid. The right lung is dark blue and slightly mottled externally. Its internal border shows considerable emphysema. The middle and upper lobes crepitate freely, except in the upper lobe near median line, where a hard circular area measuring 10 cm. exists. The lower lobe is noncrepitant. The cut section is dark, and a large amount of dark frothy fluid can be expressed. The hardened area in the upper lobe is found to be a wedge-shaped hemorrhagic infarct. At the internal border of the infarct are several small cavities, showing softening of the infarct. The left pleural cavity is entirely obliterated by strong fibrous bands of adhesion, and the left lung is adherent posteriorly to the spleen. The lung is dark bluish externally and is strongly adherent to the pericardium. At the apex is found a cavity of duck-egg size. Throughout the upper lobe are found cavities of hazelnut size. The remainder of the organ is studded with shotty nodules. Section shows a large amount of frothy fluid and caseation of the nodules. At the extreme base posteriorly is found a whitish wedge-shaped area which is finely granular to the touch. The organ is faintly crepitant. The nerve trunks are normal. The diaphragm is adherent to the left base and to the spleen. Throat: The tongue small, thickened, retracted, and covered with whitish deposit; the papillæ are prominent. The mucous membrane covering the epiglottis is injected. The thyroid cartilage is ossified. The larynx is covered with a thin mucus layer. The vocal cords, though injected, are seen to be normal. The mucous membrane of the trachea and bronchi is strongly congested. The tonsils appear normal. The œsophagus is normal. The peri-bronchial glands are enlarged and caseous.

Abdomen: The great omentum is small, contracted, and lies to the left, containing little fat. The spleen is normal. The right kidney is embedded in a large amount of peri-nephritic fat. Its external surface is roughened and nodular, and the stellate veins are strongly injected. The organ cuts with increased resistance, and the capsule strips with difficulty, leaving a granular surface. The cortex has decreased in amount, and near the middle of the convex border of the organ occurs a raised, whitish, homogeneous area irregularly quadrilateral in form. The mucous membrane of the pelvis is smooth and normal. The cortical markings are indistinct, and the glomeruli show as glistening points. The left kidney has two small retention cysts on its convex surface. The cortex is even more atrophied than in the right, and the other findings are similar. The supra-renal capsules are normal. The urinary bladder contains a small amount of turbid urine. The penis and scrotum are œdematous. The rectum, duodenum, stomach, and gall ducts normal. The liver is of mottled grayish-yellow color. The external surface is nodular. It cuts with increased resistance, the cut surface being finely granular and the portal spaces vastly increased. The gall bladder does not reach to the edge of the liver. It contains dark bile, and its mucous membrane is studded with small golden deposits of pin-point size. The pancreas, solar plexus, and mesentery are normal. The small and large intestines are much distended with gas. The vermiform appendix is normal. The abdominal aorta shows a few raised, yellowish, calcareous plaques.

Microscopical examination: Tissue specimens stained with hematoxylin and eosin after treatment with celloidin. The continuity of the heart-muscle cells is unbroken, though in many areas they are attenuated and show an excess of brownish-yellow pigment surrounding the nuclei. Scattered areas, usually bordering upon the arterioles, show well-marked accumulations of round (small) cells. These cells surround the muscle fibers and occur in such numbers as to break their columnar formation. Sections of the right auricular wall, including the pericardium, show well-marked fatty infiltration beneath the pericardium, which extends down to deeper layers of heart-muscle fibers. The pericardium is injected, swollen, and covered with a layer of fibrin of variable thickness, certain points of this fibrinous layer showing a deposit of a homogeneous material staining vividly with eosin. Examination of the adherent clot found within the right ventricle shows externally a well-defined layer of fresh blood, and beneath this a fibrinous clot inclosing leucocytes in various stages of disintegration. At the center the mass is softened and formless in character. Sections of pericardium and adherent clot stained by Gramm-Weigert method show a very few short, thick, positively staining bacilli with rounded ends. Sections stained for the tubercle bacillus resulted negatively. The lung tissue shows areas ovoid in shape and consisting of a caseous center staining pink with eosin, a central zone of formative cells, giant cell with caseous centers, and a form of cell epithelioid in character. A still outer zone of comparatively well-organized fibrous tissue separates these areas from the lung tissue proper. This outer zone includes a system of blood vessels. A portion of the section shows great infiltration of red blood corpuscles into the alveoli. The vessels are engorged, especially the veins, some of which are very greatly distended by blood. At the borders of this portion of the section leucocytes, for the greater part small round cells, occur in great numbers. The remainder of the lung, although nearly free from tuberculous infiltration, shows within the alveoli a well-defined mesh work of fibrin staining well with eosin. The arterioles show an increase in the thickness of their coats. This change is most marked in the media, causing some stenosis of the vessels. Sections of the liver show distention of the intralobular veins with blood. The cell columns are broken down, and the liver cells show pressure degeneration, the nuclei staining faintly and vacuoles showing in the cell contents. Yellowish-brown crystals of bile occur between the cell columns. The fibrous connective tissue of the portal spaces is distinctly increased in quantity. The walls of the portal vessels are thickened and convoluted. The bile ducts are increased in number. At many points surrounding the portal spaces the liver cells are vacuolated and often replaced by fat globules. In the spleen the central arterioles of the Malpighian corpuscles are thickened and enlarged, the media being noticeably increased. The trabecular network of fibrous tissue, as well as the capsule, has increased in quantity, and the contained blood vessels are much engorged. The splenic pulp contains a considerable amount of brownish-yellow granular hematoidin crystals. The splenic scar shows on section a stellate mass of organized fibrous tissue containing small blood vessels and showing beneath deposits of calcific material. In the kidneys the Malpighian corpuscles surrounding the glomerular tufts of vessels are quite generally thickened, and the glomeruli proper are atrophied and sometimes completely changed to a homogeneous hyaline substance. The interstitial tissue generally is increased, most noticeably so about the proximal convoluted tubules, where occur also infiltration corpuscles, mostly small round cell leucocytes. The cells lining the uriniferous tubules, especially those of the proximal ones, are swollen and granular, with faintly staining nuclei. A few granular casts are seen. The blood-vessel walls are thickened and convoluted. At one portion of the section, lying just beneath the capsule, the lining cells of the tubules are greatly disintegrated and stain vividly with eosin. The glomeruli show these changes to a lesser degree. This region is also bloodless.

Anatomical diagnosis: Cerebral hemorrhage, fibrinous pericarditis (shaggy heart), cardiac dilatation, cardiac vegetations, tricuspid insufficiency, arterio-sclerosis (left coronary artery and aorta), acute myocarditis, fatty infiltration of heart, chronic pulmonary tuberculosis, chronic pleuritis, hemorrhagic and anæmic infarcts of lung, hypostatic œdema of lungs, tubercular adenitis, chronic interstitial nephritis, atrophic (unilobular) cirrhosis of liver, chronic splenitis (slight).

H. K. P.
P. M. C.

Tubercle of intestine.

C. R.; age, 54; occupation, sailor; white; unmarried; admitted to United States Marine Hospital, Baltimore, Md., January 28, 1902.

Previous history.—Patient has, as far as he knows, had good health. Parents dead; brothers and sisters living. Drank some.

Present history.—Says present illness dates from October 5, 1901, and followed the eating of some green apples. Had diarrhea, which has been more or less continuous since that date. Has had but slight pain at any time in abdomen, but frequently feels some uneasiness about abdomen when bowels move. Has been under treatment at down-town office, and is rapidly growing worse.

Examination.—Patient is much reduced in flesh. Before he was taken ill he weighed from 140 to 145 pounds; now he weighs 114 pounds. Has a sallow, anæmic appearance; skin is shrunken and shriveled over body and limbs. Chest: Lungs, normal; heart, normal. Liver, area of dullness is somewhat less than normal. Spleen, no apparent change in area of dullness. Abdomen has a clammy feeling; no pain elicited on pressure over sigmoid flexure or course of colon. Is having from four to six or seven stools during every twenty-four hours' time, stools being highly colliquative in character, and contain undigested articles of food; no blood.

Microscopical examination.—Cover slips prepared from stools show them to be swarming with bacilli, cocci, and sarcinæ. No amœbæ coli were found. With carbol-fuchsin stain a bacillus was detected in a number of slides, but morphologically did not resemble tubercle bacilli, though patient is strongly suspected as suffering with intestinal tuberculosis. Urine, sp. gr. 1.010; albumen present, and is passing about 250 c. c. of urine daily.

Treatment, rest in bed, salol, strych. sulph., syr. ferri iodid., bismuth. subnit., etc.

Diet, milk, soft-boiled eggs, milk toast, and broiled scraped lean beef, eggnog p. r. n., and predigested foods.

February 15.—Weight, 108 pounds; condition rapidly growing worse. Continues to have from five to seven large, watery stools daily, containing curdled, undigested milk. Is now passing from 1,200 to 1,400 c. c. of urine daily since he has been taking infusion of digitalis. Order tinct. card. comp. and tinct. nucis vomicæ to stimulate appetite, which is very poor.

February 21.—Argenti nitras., 0.30 gram; aquæ, 200 c. c. administered as high enema, after washing out bowel with 2,000 c. c. warm water.

February 23.—Silver nitrate enemata irritate bowel and greatly increase number of evacuations and ordered discontinued.

February 24.—Examine stools microscopically; cocci and bacilli present in large numbers, but nothing definite found. Gross appearance of stools, thin, yellow, containing much mucus and fluids.

February 25.—Bismuth. subint. and tinct. krameria ordered. Patient grows worse.

February 28.—Acid hydrocholoric dil. and liq. pepsin to improve digestion.

March 1.—Pulv. doveri, sacch. lactis, and bism. subnit. ordered. Other astringents failed to do any good.

March 1.—Patient insists on leaving hospital, but is unable to walk. Is very weak and much emaciated.

March 5.—Creosote carbonate, gr. iii, t. i. d. in capsules 30 minutes after eating.

March 7.—Still growing weaker. Iodomuth, 0.12 gram., in capsules t. i. d.

March 8.—Normal saline solution, 500 c. c., injected under skin of abdomen.

March 9.—Saline injection repeated. Temperature has been running subnormal since February 27 and now ranges about 36° C.

March 10.—Ordered hot-water bags about patient, as he complains of feeling cold.

March 14, p. m.—Has not taken any nourishment all day and mind is wandering at times.

March 15.—Rectal temperature 35.2° C. Is very weak and declines all foods and medicines.

Died at 9.40 p. m.

Necropsy (*fourteen hours after death*).—Body of male, white, below average height, emaciation marked, rigor mortis, and post-mortem lividity in dependent parts of back. There is almost total absence of subcutaneous fat over abdomen and sternum. A small suppurating spot, the size of a small pea, is noticeable in the skin at the point of introduction of needle in abdomen used in giving saline solution under the skin. There is a small superficial area of congestion in subcutaneous connective tissue in left hypogastric region at point of injection of saline solution. Great omentum is small and contracted, and contains no fat, and is not congested. Liver, weight 1,070 grams, is somewhat smaller than normal, the capsule is much thickened over left lobe and is detached with difficulty, fragment of liver substance coming away with it. Over anterior, lateral, and posterior surfaces of right lobe capsule is about normal, comes off easily, and leaves a smooth surface below. The left lobe offers firm resistance on pressure, and on section cuts with marked resistance, bleeds but slightly, and presents a uniform light mahogany color. The right lobe is less firm on pressure and cuts with less resistance, and section is markedly lighter in color than the left lobe, and presents the gross appearances of a cirrhotic liver. The gall bladder is contracted and contains about 0.50 c. c. of bile.

Spleen: Weight 180 grams; is small, hard, and is of a gray clayish color. The capsule is much thickened, tough, and is detached from substance of spleen with much difficulty, bringing away attached to it pieces of splenic tissue. The substance of the spleen is hard, not easily crushed between fingers, cuts with resistance, and cut surfaces are of a light brownish color.

Kidneys: Right, weight 145 grams, small, capsule slightly thickened and slightly adherent, but detaches, leaving a smooth cortical surface. External surfaces of cortex are mottled, red and yellow. General appearance pale; pale on section, hard on pressure, and cuts with considerable resistance. The cortex is about normal in thickness. There is a marked absence of blood. Malpighian bodies are hard and pale. Left, weight 140 grams, small, capsule thickened, is detached with difficulty; cortical surfaces are mottled, red and yellow; blood absent, firm on pressure, cuts with considerable resistance. The cortex is normal in thickness; cut surface presents same appearance as right. Malpighian bodies are of pale gray color.

Stomach contracted, normally placed, contains small amount of bile-stained mucus. Peritoneal layer is white, smooth, and normal in appearance, save is blanched. The muscular coats are thin and atrophied to the thickness of manila wrapping paper in places. The mucous membrane lining is atrophied, thin, opening of glands being plainly shown, and presents a number of discolorations, apparently scars resulting from old ulcerations. Pancreas is small, hard, and contracted, and glands are enlarged and hardened. Bladder: Appearance normal, and contains 150 c. c. of urine. Colon, sigmoid flexure, and rectal mucous membrane are of a pale ashy gray color, and present throughout small, irregular, closely placed elevated surfaces, which are also perceptible to touch. These elevations are somewhat lighter than the surrounding mucous membrane, and are rather easily detached by scraping lightly with the edge of a knife, and leave small indentations at places in the mucous membrane when removed. The submucous layer is much reduced in thickness, as are also the muscular coats. The glands of mesocolon and mesorectum are considerably enlarged and hardened. The glands of the mesentery are also enlarged and hardened, and this condition is especially marked toward the colon end.

There is an abundance of bile throughout the alimentary tract from stomach downward. The appearance of the small intestines is normal. Pericardium white, glistening, contains no fluid, and here and there presents a granular appearance, though glistening.

Heart small, contracted, weight 235 grams. On anterior surface of right side there is a gray, tough fibrinous patch or exudate the size of a quarter dollar and irregular in outline. Smaller patches of organized exudate are present over the surface of right auricle and over posterior surfaces of ventricles and auricles. The muscle is pale; valves are normal, save a small calcareous deposit in margin of mitral 10 lines posterior to anterior margin, which does not interfere with function of valve.

Pleural cavities normal in appearance throughout, and contain a small amount of serous fluid. Lungs are normal, normal crepitation everywhere present when pressed between fingers of hand. There is post-mortem congestion in base of both lungs.

H. R. C.
J. A. N.

Tubercle.

G. C.; age, 26 years; nativity, Kentucky; admitted to United States Marine Hospital, Louisville, Ky., February 22, 1902.

Patient had pneumonia ten years ago. Had a sore on penis, with attendant buboes, about two years ago, being treated in this hospital. Was also in this hospital from

December 18, 1901, to January 3, 1902, with an abscess of left leg, which after being opened healed promptly. Present trouble dates back only two weeks, at which time his appetite failed him and because of this he has lost some flesh in the meantime. A few days ago a severe cough set up rather suddenly, was attended by some pain in middle of chest under the sternum. Both ankles became œdematous at the same time, though at time of admission to hospital œdema had slightly subsided. To-day he has been expectorating considerable blood-stained sputa. Says he has not expectorated any before to-day. States that of late has been getting up several times at night to pass his urine.

Patient is naturally a dull-witted fellow, and his mind being more than usually befogged by his sickness, all of the above information was extracted with great difficulty and with no guaranty as to its accuracy. While in bed patient was requested to stand up in order to examine the chest better. This he attempted to do, but immediately fell in a faint, although the previous day he had walked to the hospital a distance of a mile.

Patient was a young negro of medium height and build; head rather small and narrow from side to side, giving face an animal, wolfish look. The lower eyelids were puffy, but this was the only œdema ever noted. Lips were dry and covered with sordes. A scab on left leg from previous abscess. Chest is narrow from before back and elongated; is also much emaciated. Percussion revealed no difference between two sides. Respiration was high pitched. Some crepitant râles were heard at top of left scapula.

Examination of sputa was negative as regards the tubercle bacillus. Large numbers of streptococci were found. Urine was albuminous, 4⅓ grams per liter; contained casts, narrow and broad, hyaline and granular; specific gravity, 1,020. Temperature at time of admission was normal, but in a few days reached 39. From then on it fluctuated between 38 and 39, occasionally touching 40 and sometimes touching 37.

Patient was kept in the recumbent position, placed on a strictly milk diet, given free doses of Basham's mixture and infusion of digitalis. Under this treatment the quantity mounted up from 1,500 c. c. to 2,500 c. c. daily, remaining at about the latter amount until death.

March 10.—Dizziness persists.

March 13.—Bowels a little loose.

March 14.—Had about eight very large watery stools.

℞ Pil. lead and opium, one after each movement.

March 16.—Bowels checked.

March 21.—Complained of some pain in back. Soap liniment was prescribed and seemed to relieve it.

March 23.—Seemed to be steadily going down hill, emaciating, having severe headaches and dizzy spells, and sometimes a feeling of heaviness in region of kidneys.

March 29.—Hot baths, lasting about twenty minutes, were tried daily. A short convulsion followed each. The length of bath was shortened to ten minutes, with same results. They were then discontinued.

April 3.—On examining patient to-day some œdema of prepuce was noted. On investigation, a soft chancre of long duration but of only slight virulence was discovered. It was situated on prepuce, just behind corona. The prepuce was slit up, and chancroid was treated by pure carbolic acid. For a few days after this the temperature was lower, and it was hoped that the septic absorption from the sore was cause of fever. In a few days, however, temperature resumed its old curve. The possibility of miliary tuberculosis was thought of, also that many cases of Bright's disease have an irregular fever, and as nothing abnormal could be made out from repeated examinations of lungs, the latter was thought to be most probable, the cough patient had on admission having subsided a few days after admission.

April 8.—Because of approaching fatal termination, patient, who had already been taken off the strictly milk diet, was humored in all ways possible as to his food.

April 11.—Pulse beginning to weaken.

April 12.—Bowels not moving. Calomel and jalap prescribed.

April 14.—Had two good movements last night. His mind very dull and heavy. Has insomnia.

April 15.—Condition unchanged.

April 16.—Died quietly at 7.15 a. m. without a struggle.

Necropsy (*twenty-four hours later*).—Body of an adult male negro, much emaciated, rigor mortis about passed off. Usual median incision. Percardium contained about 30 c. c. clear fluid. Heart contracted and empty. A large milk spot on anterior surface. Muscle very pale and flabby. Valves normal. A caseating bronchial gland the size of a pigeon's egg noted in the anterior mediastinum. The left plural cavity contained about 500 c. c. of sero-fibrinous effusion. Fairly recent adhesions binding lobes together and the posterior surface to chest wall. Lung was a little congested posteriorly, but no spots of consolidation. Lung was studded on surface and sections by fine miliary tubercles; few of these showed any enlargement. Weight of left lung, 610 grams. Right pleural cavity contained about 100 c. c. of sero-fibrinous effusion. Right lung also studded by miliary tubercles. Weight of right lung, 890 grams. Peritoneal cavity contained about 2 liters of flaky fluid. Intestines and mesentery also studded with miliary tubercles. No ulcers noted in interior of intestines. The spleen was enlarged, contained several tubercles; here many were enlarged, some to size of large buckshot, the average size being that of a split pea. Weight of spleen, 210 grams. Kidneys were very large; the enlargement seemingly uniform; weight of right kidney was 410 grams; that of left kidney, 400 grams. Kidneys were pale in color and somewhat flabby. On section they proved to be amyloid kidneys, the cortex being enormously thickened, of a pale yellow or fatty aspect. Pyramids were about normal. Liver enlarged in size, pale in color; contained only an occasional small tubercle on surface; none noted on section. Weight, 1,750 grams.

Many of the mesenteric glands had already been noted as much enlarged. Resting against the posterior wall of abdomen, just below the gall bladder and duodenum, was quite a mass of them. The glands farthest away from center of mass were only enlarged, some caseating. Those in center of mass had fused, and there were several abscess cavities which were broken into. Each contained about 15 to 20 c. c. of thin pus. This mass of glands rested on both sides of vertebral column, though most of it was on the right, the aorta and vena cavity seeming, as it were, to tunnel under them, so close were they in apposition to each other. The mass of glands stripped free from the vertebral column and the psoas muscle, showing that it had no connection with either. This was confirmed by finding various other glands enlarged and caseating somewhat removed from this mass. This mass of glands weighed 350 grams.

As no large tubercle was noted in lung and no tubercular ulcer of intestine was noted, this tabes mesenterica must have been primary, and the long-standing suppuration a cause of the amyloid kidney. The presence of this tubercular focus had never been suspected. There was never any localizing symptoms, no pain, no tenderness, no marked intestinal symptoms, diarrhea or constipation, and until a few days before death at least no tympanites, which is said to be a marked symptom of tabes mesenterica. It had evidently been there many months, and patient had done hard work and believed himself to be a well man until brought down by the secondary amyloid nephritis.

T. D. B.
G. B. Y.

Tuberculosis and syphilis.

J. D.; age, 43; nativity, Illinois; admitted to United States Marine Hospital, Fort Stanton, N. Mex., December 26, 1899; died February 13, 1902.

Previous history.—(Taken from clinical notes of medical officer in command, St. Louis, Mo.) Family history, negative. Has had gonorrhea and venereal sores, but gives no history of syphilis. Admitted to hospital June 3, 1899, suffering from cutting pain in left chest and terrible cough. Cough began six weeks ago, followed by profuse expectoration, night sweats, hemorrhage, loss of weight, dyspnœa, and œdema of feet and ankles at times. Has limited expansion of chest walls and moist râles in apices. A painful area in midaxillary line 2 inches square on level with sixth rib, where bubbling râles are heard. By December 5 considerable improvement had taken place.

On arriving at Fort Stanton examination revealed flatness over the apices and some diffused foci in lower lobes of both sides. Cough and expectoration severe. Believed to be a favorable case. The patient gives no history indicating syphilis. During March, 1900, a peculiar gait was observed, which speedily developed into a well-marked attack of partial paraplegia, which was immediately diagnosed by Passed Assistant Surgeon Cobb as emanating from syphilis of the nervous system. The patient was very soon brought under the influence of potassium iodide, and marked improvement soon occurred. However, at intervals attacks were recurrent, which were always relieved temporarily by specific treatment. Later marked tabetic symptoms began to appear and the eyesight failed. Examination of the retina revealed syphilitic involvement of the same, which also improved under the influence of specific remedies for the time being. It now became evident the lesions of the nervous system, through originally syphilitic, had progressed beyond the influence of syphilitic medicines. The tabetic seizures became more and more severe, especially the girdle pains, while the lung disease also increased in severity. But the patient possessed wonderful vitality, and the fatal termination was resisted for a much longer time than was thought possible in such a case. Death occurred February 13, 1902.

Necropsy.—Body tall, slender, and greatly emaciated. Finger and toe nails blue. Moderate rigor mortis, skin dry and anæmic, superficial scar on right shin, pupils dilated—left more than right. Bedsore on right hip, right knee, and left shoulder. Brain: Calvarium removed. Superior longitudinal sinuses injected with dark blood. Meningeal vessels also congested. Subdural space moist. About 30 c. c. of cerebrospinal fluid present. Arterial circulation at base of brain engorged. Inner border of lenticular and caudate nuclei extending out from internal capsule show numerous white lines in radiate form reaching nearly to the outer border of the nuclei. The central portion of the optic thalamus shows changes similar to those above, except here the lines are found on longitudinal section. The floor of the fourth ventricle is strongly injected. Cord: The subdural space contains a quantity of light straw-colored fluid, more prominent in lumbar region. The veins of the pia mater posteriorly are strongly injected. Throat: Tongue small, retracted, pale, and covered with a heavy yellowish-white deposit. The papillæ are indistinct. Roughened and granular appearance of the pharnyx, with a fibrous plaque on the left side involving the mucous and submucous tissue. The cricoid cartilage is ossified anteriorly, and the mucous membrane of the larnyx and trachea injected and covered with thin yellowish mucus. Thorax: The anterior mediastinum shows enlarged lymph glands. The lungs do not meet in the median line. The pericardial cavity is entirely obliterated by fibrinous adhesions, and the pericardium is firmly adherent to both lungs and to the diaphragm. Both pericardial layers are roughened and strongly injected. The heart is much enlarged, the apex being made up of the right ventricle. The aortic and pulmonary valves are normal. The mitral valve admits three finger tips. The left heart is filled with separable antemortem clots. At the base of the external cusp of the aortic valve occurs a linear area of nodulated calcareous deposit; calcareous plaques also occur at the beginning of the aorta. The right heart is filled with antemortem clots. There is considerable dilatation of the right heart. The left pleural cavity is entirely obliterated. The right pleural cavity is free in the mammary region alone. The left lung contains a cavity in the apex of hen's-egg size. The upper lobe is enitrely consolidated. The lower lobe contains numerous shotty nodules, is emphysematous anteriorly and œdematous posteriorly. The right lung also contains a large cavity in its apex. The interlobular fissures are obliterated. Both upper lobes strongly infiltrated. The lower lobe contains shotty nodules, is emphysematous anteriorly, and in state of hypostatic congestion posteriorly. The great vessels (except beginning of aorta) and nerve trunks normal. The diaphragm is adherent to the bases of the lungs and pericardium. On the right side it reaches to the upper border of the fifth rib; on the left to the lower border of the fifth rib. The thymus gland is not demonstrable.

Abdomen: The omentum is normal. The spleen contains an increase of connective tissue. The kidneys enlarged, capsules not adherent, bloody on section. The suprarenal capsules, urinary bladder, organs of generation, rectum, and duodenum normal. The stomach dilated, reaching nearly to umbilicus, and showing an hourglass contraction in the median line. The gall ducts normal. The liver is of normal size, smooth externally, bloody on cut section, centers of the lobules darker than peripheries, and portal spaces showing increase of connective tissue. The pancreas and solar plexus normal. The mesentery contains enlarged and caseous glands. The retro-peritoneal glands are in a similar condition. The small and large intestines and vermiform appendix normal. The abdominal aorta contains raised calcareous plaques.

Anatomical diagnosis: Cerebral syphilis (basal nuclei); syphilitic sclerosis of cord (posterior columns); tubercular laryngitis; tubercular tracheitis; tubercular pericarditis; chronic pulmonary tuberculosis; chronic pleuritis; tubercular adenitis; hypertrophy and dilatation of right heart; arteriosclerosis of aorta; chronic passive congestion of liver; chronic splenitis; passive congestion of kidneys; chronic gastritis.

H. K. P.
P. M. C.

Tubercle.

A. B.; age, 25; nativity, Jamaica; readmitted to Marine Hospital, Mobile, January 28, 1902.

Family history.—Father and mother both dead, from old age and enteric fever, respectively. Four brothers and three sisters, all living and in good health.

Personal history.—Was admitted to Marine Hospital, Mobile, December 17, 1901, suffering from intermittent malarial fever, and remained under treatment for that disease until January 28, 1902, when the diagnosis was changed to tubercle. The patient states, with the exception of chills and fever, that he has never before been ill. Contracted his present illness while in Habana, Cuba. Was a cook on his vessel. One evening after supper, being very warm, he removed his clothing, came on deck in this condition, fell asleep, and there remained all night. From this time he began having chills and fevers.

Just prior to the diagnosis of tubercle having been made the patient revealed the following: Loss of flesh, sinking in of both supraclavicular spaces, prominence of bony parts of chest. Apex beat of heart normal; breathing hurried on account of pain, especially on right side; bronchial breathing at apex of right lung, also mucous râles and creaking sound at apex of lung, both anteriorly and posteriorly. Dullness over apex of right lung, anteriorally and under shoulder blades. A microscopical examination of two specimens revealed the tubercle bacilli in small numbers. The usual remedies were administered, with no effect. The case terminated in death, morning of March 28, 1902.

Necropsy (*ten hours after death*).—The body of a slightly built colored male, apparently 25 years of age. Rigor mortis well marked. Body opened by long incision from chin to symphysis pubes. Both pleuræ are bound down so firmly to lungs as to necessitate tearing by piecemeal. The heart is medium sized; a large clot is in left ventricle, also in right auricle and extending to right ventricle; the valves are pale and flabby. Heart's weight is 325 grams. Both lungs are infiltrated with tubercle, with exception of lower lobe of right. There is a small cavity in upper lobe of right lung. Weight of right lung is 1,000 grams. Weight of left lung is 750 grams. The spleen contains a hemorrhagic infarct. Weight of spleen is 240 grams. There is a supernumerary spleen the size of a pigeon's egg. The capsule of the left kidney peels easily. The line of demarcation between the cortical and the medullary substance is well marked; its weight is 170 grams. The capsule of the right kidney also peels easily, and its weight is 180 grams. The urinary bladder contains 30 grams of fluid. The liver is dark chocolate in color, much congested, and bleeds easily on section; its weight is 1,500 grams. The gall bladder is distended with bile. The intestines are normal. The brain and the spinal cord were not examined. Cause of death, tubercle of lungs.

W. P. M.

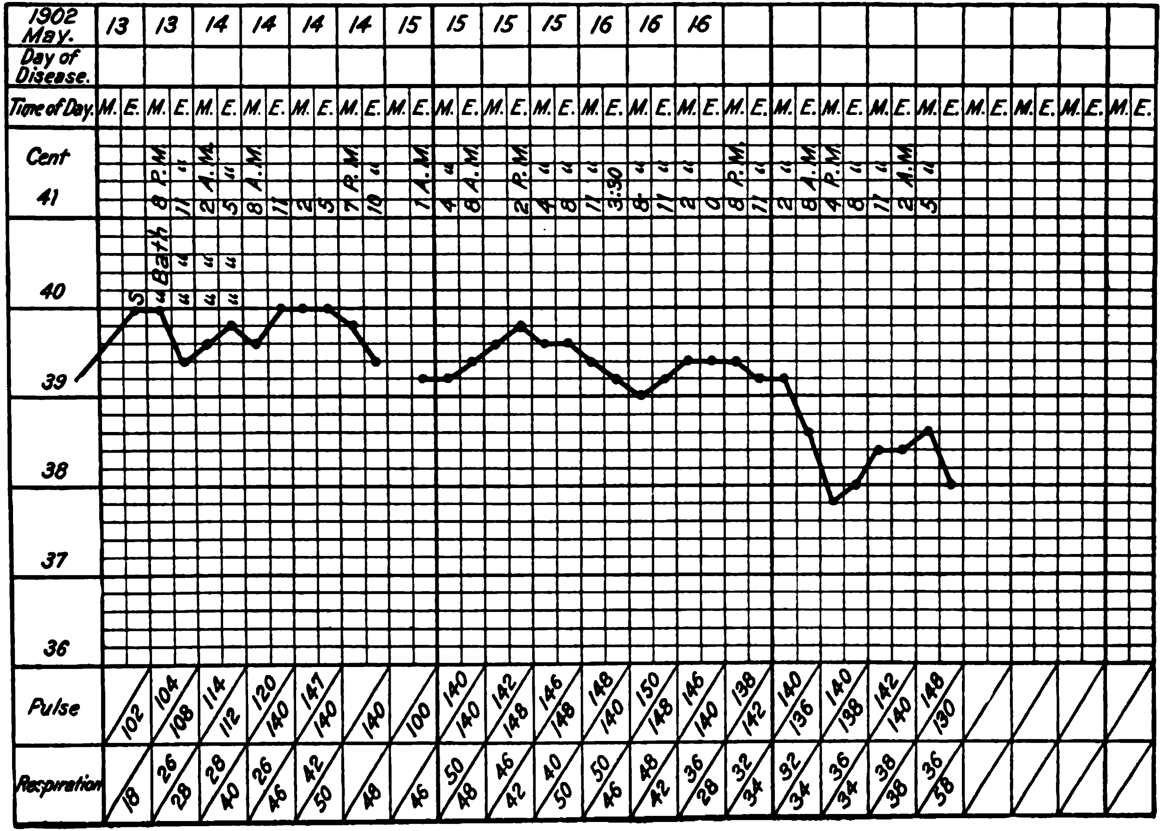
Tubercle.

W. A.; age, 26 years; colored; nativity, Bermuda; admitted to the United States Marine Hospital, San Francisco, Cal., May 13, 1902; died May 18, 1902.

History.—The patient stated that he fell into the hold of his vessel on the previous day, striking on his left shoulder and side. He attempted to continue his work, but had to give it up on account of pain. The examination showed a swelling of his left elbow, but no fracture could be made out. There was considerable creaking in the joint, however, when the arm was moved. The patient complained of severe pain in his left side, but no ribs were broken. The next day, the 14th, the breath sounds were diminished over the right lung, but exaggerated over the left lung. The pulse was weak, rapid, and of low tension. He complained greatly of pain in his right side. The elbow was not painful unless the arm was moved. On the 15th the patient still complained of pain in his right side and his pulse had not improved. Rough, grating sounds were heard over his heart. On the 16th he became delirious and was kept in bed with difficulty. There was considerable expectoration of mucopurulent matter streaked with blood. No tubercle bacilli were found in the sputum, but it contained great numbers of pneumococci. The specific gravity of the urine was 1.025, and there was a large quantity of albumen in it. On the 17th the swelling of the elbow had greatly increased and had extended up the arm. The patient was still delirious and his pulse was weak and rapid, sometimes being hardly perceptible at the wrist. He died from exhaustion the next day at 10.30 a. m.

Necropsy (*six hours after death*).—Height, 165 cm.; body well nourished; rigor mortis well marked; left arm and forearm swollen. There is an abrasion of the skin 5 cm. above elbow on right arm, scar on right side of upper lip, and scar on inside of left thigh. Conjunctivæ slightly yellow. On opening the left-elbow joint, by a longitudinal incision, about 15 c. c. of pus escapes. This pus has infiltrated all the tissues around the joint and extends some distance into the tissues of the arm. The pus probably formed in the connective tissue between the muscles and extended then into the joint. The bones are in a healthy condition and there is no fracture. The abdominal fat is 1 cm. thick. Peritoneum shiny, no evidence of inflammation; appendix normal; omental fat scanty; no fluid in abdominal cavity; intestines moist and filled with gas; edge of liver extends 2 or 3 cm. below costal margin; gall bladder partially filled with fluid. On opening thorax clear fluid escapes; no ribs fractured. A considerable area of the right pleura and pericardium is covered with a yellow, purulent, flaky lymph. The right pleural cavity contains 1,000 c. c. of clear, straw-colored fluid, the left pleural cavity about 75 c. c. On opening the pericardial

Name, W. A.; age, 26; disease, tubercle, pericarditis.



sac 150 c. c. of turbid yellow fluid escapes. This fluid contains a large amount of flaky, purulent fibrin. The parietal surface is smooth, but there are a few pin-head hemorrhages present. The visceral surface is studded with minute white dots, a few of which are palpable. Heart: Weight, 250 grams. The right auricle is filled with a soft, red, recent clot, in the center of which is a small ante-mortem clot. There is a small, tough, red clot in the right ventricle, and a mixed clot in the left auricle; the left ventricle is empty. The walls of all cavities are of normal thickness. The leaflets of the tricuspid valve are somewhat thickened. There are a number of distinct palpable granules on both leaflets of the mitral valve. The pulmonary and aortic valves are normal. Right lung: Weight, 530 grams. Numerous adhesions, both recent and old, bind this lung to the thorax. A caseous tubercular cavity, the size of a cherry, surrounded by fibrous tissue, is found a little below the apex. There is another of these cavities the same size a little below the first one. The rest of the lung is congested, but not consolidated. Left lung: Weight, 300 grams. There is a puckered scar near the apex, and a dark, depressed area along the lower margin of the lower lobe. The rest of the lung is of a pale-gray color and is crepitant throughout. Spleen: Adherent over greater part of its surface; adhesions easily torn; weight, 300 grams; surface, smooth; slate color; consistency, normal; malpighian bodies slightly enlarged. Left kidney: Weight, 145 grams; surface smooth; no cysts; a white area of thickened capsule, size of pea, on convex surface; capsule strips off, taking kidney substance with it; cortical portion less than 0.50 cm. thick; color, light red streaked with yellow; pyramids distinct. Right kidney: Weight, 195 grams; surface smooth, with a number of white areas; capsule strips moderately easy, adherent over portion of organ, leaving a yellowish surface, in which ruptured blood vessels can be seen. Cortex 1 cm. thick, color same as other kidney, but the yellow streaks are not as distinct. Bladder very small, walls thickened. The stomach and intestines are normal. The pancreas is of a firm consistency and whitish color. The omentum is adherent from the internal abdominal ring to the crest of the ilium on the left side. Liver: Weight, 1,950 grams; surface smooth; color brown, mottled with yellow. Some of the yellow areas are of considerable size. The bile duct is patulous.

The following pathological report from sections of the tissues has been prepared by Asst. Surg. G. W. McCoy. Heart: The pericardium is represented by a shreddy membrane showing a high degree of infiltration, with small round cells and polynuclear leucocytes. The infiltration in many places extends well into and between the underlying muscular fibers. Some of the small blood vessels in the heart muscle show the same sort of an infiltration in their outer coats. The endocardium presents no abnormality except some thickening. A few of the muscle fibers show early but distinct fatty degeneration in the form of a few fatty granules at the poles of the nucleus. All of the fibers are in a state of cloudy swelling. Liver: The capsule is thickened and shows some round cell infiltration. There is a well-marked, cloudy swelling of the parenchyma. The connective tissue sheath, in which run the artery, vein, and bile ducts, shows a very considerable degree of infiltration, with multinuclear and round cells. Spleen: The only pathological change is the presence of a few areas, rather irregularly distributed, of coagulated necrosis. Kidney: The capsule in places shows a decided thickening, well circumscribed, and made up for the most part of a recent cellular exudate. The glomeruli show a moderate degree of cloudy swelling. The epithelial cells of the tubules are uniformly swollen and stain poorly. In many places the cells are separated from the underlying connective tissue. There is a moderate increase in connective tissue made, for the most part, of a cellular exudate or proliferation. The walls of the blood vessels are about normal in thickness. A piece of muscle from the area of purulent infiltration in the arm shows the muscle fibers to be pale and swollen. There is a very great number of round cells and polynuclear cells (pus cells) between all of the fibers. In smears made from the pus in the arm and in the pleura and pericardium, as well as from the infiltrated tissue of the mediastinum, many bacteria were found—diplococci, streptococci, staphylococci, and bacilli of various size and shape. None, however, gave the staining reactions of the tubercle bacillus.

G. W. M.
W. G. S.

L. C. C.; age, 19; nativity, South Carolina; admitted to United States Marine Hospital, Memphis, Tenn., January 10, 1902; died January 11, 1902.

History.—On admission patient stated he had been sick about two weeks, the attack commencing with a chill, and that he had had a chill or chilly sensation almost every day since, with fever all the time. A large ulcerated spot was found on posterior pharyngeal wall, making swallowing of solid food impossible; glands of neck enlarged; slight tenderness over abdomen around umbilicus; no tympanites; bowels constipated; temperature, 39.3; pulse thready; body emaciated. The treatment was simply supportive and symptomatic.

Necropsy (*twenty-four hours after death*).—Body much emaciated; rigor marked. Brain sinuses congested; membranes adherent along vertex; weight, 1,400 grams. Right lung congested; weight, 520 grams. Left lung normal; weight, 280 grams. Heart normal; weight, 220 grams. Liver normal; weight, 1,670 grams. Gall bladder contained a small amount (about 10 c. c.) of bile. Spleen engorged; weight, 340 grams. Left kidney normal; weight, 180 grams. Right kidney normal; weight, 180 grams. Small intestines congested in many places, with two spots of ulceration about one meter from ileocæcal valve, through one of which perforation had occurred. Folds of intestines matted together and covered with lymph deposit.

G. M. M.

R. S.; age, 27 years; nativity, South Africa; admitted to the United States Marine Hospital, San Francisco, Cal., January 5, 1902; died January 14, 1902.

History.—Patient had been sick seven months; he suffered from cough, profuse expectoration, dyspnœa, debility, chills, and fever. Two months ago he had several severe hemorrhages. In the past three months he lost 50 pounds. The supraclavicular fossæ are well marked. The movement of the left side of the chest is greater than the right. The vocal fremitus is increased over the right lung. There is dullness over both apices and bronchial breathing over both lungs. Mucous râles are heard over both sides of the chest. Temperature, 38.4°; pulse, 120; respiration, 30. Tubercle bacilli are abundant in the sputum. The patient was unable to leave his bed from the time he entered the hospital. He grew weaker each day and died January 14, 1902, at 1.20 a. m.

Necropsy (*ten hours after death*).—Height, 168 cm.; body emaciated. The abdominal wall is 1 cm. thick. The appendix is 7 cm. long. The intestines are of a grayish color. Brain: Weight, 1,315 grams; measurements, 19 by 13 by 9 cm.; tissue, normal. Heart: Weight, 230 grams; measurements, 7½ by 8 cm. There is a yellow clot in the right ventricle and one in the aorta extending into the left ventricle. The wall of the right ventricle is 4 mm. thick; left ventricle, 1 cm. The valves are normal, with the exception of the mitral, the edges of the leaflets being roughened. Both lungs are bound to the chest wall by strong adhesions, so that it is impossible to remove them without tearing them into pieces. The lung tissue is filled with tubercles and cheesy masses. Spleen: Weight, 117 grams; measurements, 11 by 7 by 3 cm.; color on section, reddish brown. The trabeculæ are prominent. Left suprarenal gland: Weight, 11 grams; measurements, 7 by 2¼ cm.; tissue firm throughout; color, yellowish red. Left kidney: Weight, 172 grams; measurements, 12 by 6½ by 3½ cm.; on section tissue is of a reddish color, marbled with yellow; right suprarenal capsule, measurements, 5½ by 2 cm.; tissue firm. Right kidney: Weight, 165 grams; measurements, 12 by 7 by 3 cm.; tissue in same condition as other kidney. Stomach apparently normal. There are a few tubercles in the lower part of the ileum, but no ulcers. Liver: Weight, 1,642 grams; measurements, 25 by 19 by 7½ cm.; color, reddish yellow; tissue firm to the touch, and cuts with considerable resistance.

W. G. S.

Tubercle of lung.

J. F.; age, 37; nativity, Ireland; admitted to Marine Hospital, Baltimore, Md., December 30, 1901; died January 7, 1902.

Had marked dyspnœa, rapid and very weak pulse, high temperature, and is in a much-exhausted condition.

Physical examination.—Marked dullness over lung area in front and behind; gurgling râles in apical regions in front and sibilant and sonorous râles all over lung area.

Treatment.—Stimulants, spts. frument. and strychnine, p. r. n.

December 31.—Tubercle bacilli present in sputum and streptococci and staphylococci in great numbers.

Necropsy (*eight hours after death*).—Body of male, white, medium height, slightly emaciated; scrotum congested; post-mortem lividity in dependent parts; rigor mortis marked; no distinguishing marks. Lungs: Left, weight, 1,065 grams; dense adhesions in front and at diaphragm; apex, clear. Right, hard and contracted to half size; closely adherent in front, laterally, posteriorly, and at diaphragm. Multiple abscesses and tubercles throughout both lobes. Pericardium pale, white; contains 40 c. c. pale, light fluid. Heart: Large, congested; large pale clot in right ventricle; valves normal; weight, 425 grams; muscles, pale and flabby. Kidneys: Left, large congested cortex; weight, 310 grams; cortex thin, tough, and fibrous; capsule adherent; pelvis contains large quantity of fatty tissue. Right, abnormally displaced upward; lower end projecting just below last rib; weight, 235 grams; red and congested; cortex normal, friable; pelvis contains some fat. Liver: Weight, 2,540 grams; congested, friable; otherwise normal. Spleen: Weight, 625 grams.

J. A. N.
H. R. C.

G. W.; age, 60 years; nativity, Ireland; admitted to United States Marine Hospital, St. Louis, Mo., February 17; died February 21, 1902.

History.—Was in great distress on admission, on verge of collapse. Has had cough for several years, with expectoration of purulent sputum, but says he never expectorated blood. Cough worse at night, especially during past week, when he has had but little sleep. Much emaciated. Dyspnœa since last winter. Anæmic. Has deep hollow cough. Appears to have been suffering from phthisis for a long time. Temperature, 36.6°; pulse, 118; respiration, 21, on admission. Large bubbling râles upper lobes both lungs. Pure bronchial breathing fourth left interspace about 5 cm. to outer side of mammary line; very little vesicular respiration below this point. Lower lobe, right side consolidated. Tubercle bacilli demonstrated. Strychnia sulph., 0.002 grams, every three hours. Codeia cough sedative pro re nata. Magendies solution, 0.36 c. c. at bedtime. Spirits frumenti, 16 c. c. every four hours.

February 18.—Rested very little first night.

February 19.—Does not rally.

February 20.—Condition critical. Strychnia increased to 0.003 grams.

February 21.—Moribund during sick call. Died 10.10 a. m.

Necropsy (*five hours after death*).—Body that of a white male, apparently about 65 years of age. Head bald. Left leg seat of an old amputation at the junction of middle and lower third. Body emaciated. Rigor mortis well established. Abdominal fat scanty; chrome yellow. Thickness of abdominal wall 1 cm. Cartilage very brittle. Senile changes in arteries. Old adhesions left pleura. Left lung floats; weighs 1,150 grams. Areas of consolidation scattered. Lower lobe almost completely solidified. Right lung weighs 1,450 grams; floats. Upper lobes crepitate on pressure, lower lobe very solid, small cavities at extreme base, largest as large as hazelnut, discharging putrid pus. Heart weighs 340 grams. Ante-mortem clot in right auricle. Thickness of left ventricular wall, 2 cm. Mitral valve competent. Small calcareous deposits on aortic valve. Tricuspid and aortic valves competent. Thickness of right ventricular wall, 5 cm. Liver weighs 1,750 grams, normal in appearance. Gall bladder contains clear bile. No calculi. Right kidney weighs 170 grams. Capsule strips readily. Cortex, 1 cm. thick. Organ passively congested. Left kidney weighs 220 grams, somewhat larger than right. Cortex, 1 cm. thick. Condition similar to right. Spleen weighs 85 grams. Very small, pale, intercellular tissue increased. Appendix normal, lies posterior to cæcum. Urethra pervious. Bladder contains small quantity urine. Rectum and colon contain feces. Brain not examined. All other organs normal.

J. M. H.
J. M. G.

Tubercle of the lungs and larynx.

J. McM.; age, 50; nativity, Massachusetts; admitted to the United States Marine Hospital, Stapleton, Staten Island, N. Y., January 6, 1902; height, about 5 feet 6 inches; weight, about 110 pounds.

The patient was brought to the hospital in the ambulance and was admitted in a state of exhaustion. His breathing was very slow and labored and there was considerable dyspnœa. There is almost complete aphonia, and in his exhausted condition it is not possible to get a full history from him. He is very thin and emaciated and has had a cough for a long time. Recently there has been some hæmoptysis.

Lungs on examination are found to be in emphysematous condition. Heart's action is very weak and there is marked retraction in presternal notch and also in epigastrium. Inspirations are taken with great difficulty, and there is evidently an obstruction in the larynx. Complains of sore throat, but on examination mucous membrane of throat appears to be normal.

3 p. m.—Morphine sulphate, one-fourth grain, was given hypodermically. Heart became strong and respirations not quite so labored.

6 p. m.—Patient became deeply cyanosed, respirations ceased, and action of heart became imperceptible. Tracheotomy was done at once, but respirations did not begin again. At this time femoral pulse was barely perceptible. Immediately after trachea was opened artificial respiration was started. Strychnine 1/20 grain, nitroglycerin 1/60, and digitalin 1/100 grain, was given. After about thirty minutes patient began to breathe voluntarily, action of heart gradually improving. He then drank 25 c. c. of whisky and a small quantity of water.

11 p. m.—Heart is becoming weak again. Give strychnine, 1/30 grain, every two hours during night, milk ad lib.

7th.—Passed a good night and is doing nicely this morning. Respiration has become regular and natural and pulse is good. Give milk ad lib. Liquid thyline to be sprayed over mouth of tube every ten minutes. Keep tube and wound clean.

17th.—Patient's condition remained good up to this date, except for occasional attacks of mild delirium and some suppuration of wound. His nourishment, which he took well, consisted of weak milk punches, egg albumen, and whisky, and strained soups given at stated intervals. At 1.30 p. m. heart became rapid and weak, respirations very hurried and shallow. Strychnine, grain 1/30, was given. Tube was removed and trachea found to contain a considerable quantity of thin purulent fluid. This was cleaned out as well as possible and wound thoroughly cleaned and dressed. Heart gradually became weaker and respirations more hurried and shallow. Patient died at 3.50 p. m., January 17, 1902.

Necropsy.—Rigor mortis well established twenty-four hours after death. Larynx was opened, and mucous membrane of larynx and upper part of trachea found covered with a thin purulent fluid. Otherwise it was normal below vocal chords. Chords also normal. Just above vocal chords on either side was seen the opening of two abscesses, which were deeply seated, and upon pressure discharged a purulent fluid. Attached to the right margin of the epiglottis was a flattened circular growth about 3 cm. in diameter, grayish white in color externally and also on cut section. On cutting was of rather tough consistency.

T. G. D.
P. H. B.

Tuberculosis.

W. S.; age, 24; nativity, Scotland; admitted to United States Marine Hospital, Fort Stanton, N. Mex., October 4, 1901; died November 8, 1901.

History.—(Taken from clinical notes of medical officer in command at Port Townsend, Wash.) Family history negative. Admitted to hospital July 20, 1901. Previous sicknesses—colds and gonorrhea. Present sickness started about the latter part of May, 1901, with cold. There is slight expectoration and cough. Has lost weight and suffers from dyspnœa and night sweats. Physical examination shows area of dullness over and under right clavicle; harsh breathing over right lung, especially apex; moist râles on inspiration over dull area and also in left apex. Heart sounds are loud, and diastolic sound at apex is booming in character and somewhat blowing. Examination of sputum shows great numbers of tubercle bacilli. Condition improved while in hospital. Discharged September 27, 1901, and transferred to Fort Stanton, N. Mex.

On arrival at Fort Stanton, physical condition was noted as follows: Slightly limited motion of left chest; typical nails and gums and chest; vocal fremitus greater on left side; diminished resonance in apices, and dullness in left infra-clavicular region; roughened breathing in right apex and axillary region; roughened breathing throughout upper half of left lung, with typical râles in left base, posteriorly from seventh spine downward; pleuritic friction sounds during expiration synchronous with heart beat; occasional râles in left apex; apex beat of heart diffused and somewhat to the left; mitral and tricuspid sounds indistinct; pulmonary second sound very weak and indistinct. The sputum showed numerous long and slender tubercle bacilli which stained well. Urinalysis negative. The patient's general condition became rapidly worse, and nervousness and severe headache became more or less constant. The face assumed a typhoid appearance. November 3 delirium set in. Could be aroused with difficulty, but would invariably relapse into a semiconscious state. November 8 the delirium increased and became constant. Eyes were rolled up, mutterings, mouth open, groaned continually, pulse very feeble and kept up by strychnine alone. Died at about 5 p. m.

Necropsy.—External examination: Body emaciated. Rigor mortis and post-mortem lividity well marked. Brain: Calvarium removed. The anterior and middle meningeal arteries and veins are strongly injected along the longitudinal sinus. A small amount of clear fluid occurs at the base of the brain. The dura mater is strongly injected externally and is strongly adherent beneath the lateral hemispheres along the longitudinal from the posterior marginal convolution to the posterior marginal fissure. At the points of adhesion numerous gelatinoid tubercles are seen, most prominent posteriorly. These areas extend along the courses of the vessels in the pia about 2½ cm.; length of surface, 15 cm. The corpus callosum is normal. A quantity of clear fluid is present in the ventricles. The tela choroidea superior is injected. The tela choroidea inferior contains scattered tubercles. The pia covering the pons and cerebral peduncles is strongly injected.

Cord: The veins and arteries in the pia mater are strongly injected, and the pia is diffusely reddened.

Thorax: Anterior mediastinum shows that the right lung is beyond the median line, and that both lungs meet. The thymus gland is not demonstrable. The heart contains ante-mortem clots in the auricles and in the beginning of the aorta and pulmonary artery. The ventricles contain dark blood clots. The valves are all competent. There are areas of calcareous degeneration at the beginning of the aorta. The myocardium of the ventricles is increased. There is some fibrosis of the interventricular septum. The layers of the pericardium are smooth and shining and its cavity contains a moderate amount of clear fluid. The right lung is strongly adherent at the apex, which on section shows hard nodules and one large cavity. The remainder of the lung contains isolated nodules, is emphysematous at its anterior border, and is adherent at the posterior border of the lower lobe. The left pleural cavity is obliterated and the left lung is strongly adherent to the pericardium. The upper half contains large masses of consolidated tissue and crepitates faintly between these. The lower lobe is entirely consolidated and the upper lobe contains several cavities of varying size. The great vessels and nerve trunks are normal. The diaphragm is adherent to the base of the left lung and to the liver.

Abdomen: The omentum covers the intestines to the left and is adherent to the spleen. The latter shows whitened areas of fibrosis externally. The left kidney is small, with prominent fetal lobulations externally, and the capsule strips readily. Many ill-defined whitened areas of small size occur on the external surface beneath the capsule. These on section are seen to extend into the cortex, and are caseous in character. Along the cortex internally are seen similar nodules. The right kidney is about half as large again as the left, the capsule strips easily, and the organ exhibits the same external conformation observed on the left kidney; cut section shows considerable blood. The suprarenal capsules appear normal; also the urinary bladder, organs of generation, rectum, duodenum, stomach, and gall ducts. The liver is adherent to the diaphragm along its superior border, and the right lobe is joined to the parietal peritoneum; there are adhesions at the outer border also. The liver is of moderate size. Near the convex surface are seen, on section, many small yellowish tuberculous areas not well defined. Externally, down into the tissue for a distance of 2 cm., occur areas of hardened fibrous tissue. The pancreas and solar plexus are normal. The mesentery shows enlarged and caseous lymph glands. The retro-peritoneal lymph glands are in a similar condition. The small intestines are roughened externally and present areas of ulceration. The vermiform appendix is 7 cm. long, has a mesentery of its own, and is adherent at the tip to the posterior peritoneum. The small and large intestines, especially the transverse colon, are distended with gas. The great vessels and nerve trunks are normal.

Anatomical diagnosis.—Tubercular pachymeningitis (interna); arterio sclerosis of aorta; brown atrophy of heart; chronic pulmonary tuberculosis; chronic pleuritis; tubercular nephritis; tubercular hepatitis; tubercular ulcerative enteritis; lymphadenitis.

H. K. P.
C. R.
P. M. C.

Tubercle of lung.

T. L. (colored); age, 36; nativity, Kentucky; admitted to United State Marine Hospital, Fort Stanton, N. Mex., July —, 1901; died August 18, 1901.

Previous history.—(Taken from clinical notes of medical officer in command, St. Louis, Mo.) July 5, 1901. The patient has had a cough, pains in his head and chest, weakness, dyspnœa, profuse expectoration, no appetite, irregular bowels for the last four months. He has also had night sweats. Mother died of pneumonia. He has lost 31 pounds during the four months. Examination: Fairly well nourished; vocal fremitus increased over right lung, dullness over both lungs; also rough breathing over both lungs. Tubercle bacilli present in sputum in large numbers. 11th. Had a severe hemorrhage from the lungs. All stimulants stopped. 12th. Looks well this morning and does not seem to have any bad results from hemorrhage. 22d. Transferred to Fort Stanton.

W G. S.

Condition on arrival at Fort Stanton.—Bad. Lessened movement of left chest, vocal fremitus greater on right side, marked dullness throughout left lung, crackling râles throughout left lung, and same in right from apex to base anteriorly and in upper half posteriorly. Heart: Apex beat to left of nipple, and at same level. Accented pulmonary sound. Sputum contained numerous tubercle bacilli, branched, of various sizes, and some beaded. Urinalysis negative. The patient bore up wonderfully for about three weeks, considering the enormous lung involvement. He had a severe hemorrhage August 13, and also on the 15th and 16th. He became very weak and nervous and died on August 18.

Necropsy.—Superficial fat diminished. Rigor mortis slight. Calvarium not removed. Thorax: Costal cartilages of sixth and seventh ribs ossified. The anterior mediastinum showed nothing of interest. Heart enlarged. Enlargement more apparent on right side than on left. The left ventricular substance is hard, while the right ventricle is dilated and softened. An ante-mortem clot of considerable size occupies the right ventricle extending up into the pulmonary artery to a point beyond its bifurcation. This clot is nowhere adherent to the endocardium of the heart or the intima of the artery. The aortic and pulmonary valves are competent. The tricuspid valve is dilated, admitting five fingers rather loosely. The right auricle is also dilated. The left heart is empty of blood clots. The mitral valve admits three finger tips. The myocardium of the interventricular septum is darkened and shows many whitened areas of fibrous tissue, most of which surrounds small vessels. The pericardial cavity is empty of fluid and its layers are smooth. Pleural cavity empty of fluid. Both pleuræ nearly free of adhesions. Strong fibrous bands, however, are found at both apices of the lungs, as well as more separable adhesions along the posterior border of the left lung and to the diaphragm below. No adhesions internally to the pericardium. The left lung is dark blue-gray colored externally, somewhat mottled as to shade. The internal free border of this lung is emphysematous, light colored, and soft, crepitating feebly. Along this border as elsewhere throughout the lung occur spots of consolidation of variable size up to that of a man's hand (found in the superior lobe). These large areas very firm and lack crepitation. Upon section they are yellowish gray in color and are finely granular in structure. The consolidation at apex shows a distinctly fibrous structure, scar formation pigmented and of a stellate form. Within this mass are seen three cavities. The largest, of hen-egg size, shows an aneurysmal artery of crow-quill size, ruptured but now filled with a whitened blood clot. This cavity and the bronchioles leading out of it are filled with clotted blood. The right lung shows slightly less involvement than the left and also contains two small cavities in its apex. The peribronchial glands are deeply pigmented, enlarged, and caseous on section. The great vessels and nerve trunks normal. The diaphragm adherent by separable adhesions to base of left lung.

Abdomen: Omentum normal. The peritoneal layers everywhere are smooth and shining. The spleen small and wrinkles easily externally. Some old scars of small size beneath the capsule. Spleen normal on section. Kidneys and suprarenal capsules normal. The urinary bladder filled with turbid urine. Mucous membrane normal. Organs of generation, rectum, duodenum, stomach, gall ducts all normal. Liver on section shows darkening of centers of lobules. Pancreas, solar plexus, mesentery, small and large intestines, and great vessels normal. The vermiform appendix has a mesentery of its own.

Summary: Emaciation, slight rigor mortis, ossification of the sixth and seventh costal cartilages, enlargement of heart, incompetence of tricuspid valve, dilatation of right auricle, fibrosis of interventricular septum, chronic pleurisy at apices, acute pleurisy in other portions, chronic tuberculosis with areas of consolidation in both lungs, cavities in both lungs, tuberculosis of peribronchial lymph glands, adhesion of diaphragm to base of left lung. Abdominal viscera practically normal.

C. R.
P. M. C.

E. J. C. (colored); age, 42; nativity, Alabama; admitted to United States Marine Hospital, Fort Stanton, N. Mex., December 15, 1899; died August 24, 1901.

Previous history.—(Condensed from clinical notes of medical officer in command, New Orleans, La.) July, 1899. Cold for past three months, with cough, expectoration, and loss of weight. Examination: Well nourished, heart normal, sibilant and sonorous râles on both sides, especially right side, and above and below clavicle, and extending over left chest to nipple and axillary space. Tubercle bacilli in sputum. Daily fever. Sleeps and eats fairly well. Later cough got worse and aphonia set in and lost weight. Severe pain in left chest and attacks of indigestion.

Condition on arrival at Fort Stanton.—Infection of apices, left the worst. The foci small, scattered, and mostly broken down. Laryngeal complication and hoarse voice. Heart normal. Interrupted respiration. Cervical and inguinal glands large. Scar from bubo. Thought to have good chances for recovery. This case became gradually worse, slowly losing ground right along. Much pain was caused by laryngeal tuberculosis and voice was nearly lost. Attacks of indigestion and diarrhea became more and more frequent. He became entirely bedridden some weeks before death.

Necropsy (*six hours after death*).—Body emaciated. Slight rigor mortis. Calvarium not removed. Epiglottis irregular and nodular. Vocal cords thickened, hard, and nodular. Mucous membrane of larynx pale and eroded. Thorax: Anterior mediastinum contained enlarged glands. The thymus gland was in a state of mucoid degeneration. Heart small, left ventricle hypertrophied, as compared with right. Auricles contained white clots. Ascending aorta much dilated. Pulmonary artery normal. Lungs nearly solid, especially right. Layers of pleuræ adherent all over and to pericardium. Great vessels and nerve trunks normal, except ascending aorta. Diaphragm adherent to bases of lungs. Abdomen: Omentum thickened and congested. Spleen small, hard, and compressed out of shape by ribs, showed dark blue-black areas of pigmentation, and was adherent by firm bands to stomach, colon, liver, pancreas, and omentum. Kidneys of normal size, but with indistinct cortical markings. Suprarenal capsules normal. Urinary bladder distended. Organs of generation normal. Rectum and duodenum normal. Stomach small and contained undigested food. Gall ducts normal. Liver congested and showed well-marked bands of connective tissue on its surface. Pancreas and solar plexus normal. Mesentery contained many enlarged tuberculous glands. Small and large intestines normal, also great vessels.

C. R.
P. M. C.

C. I.; age, 45; nativity, Norway; admitted to United States Marine Hospital, Fort Stanton, N. Mex., December 26, 1899; died July 5, 1901.

Previous history (condensed from clinical notes of medical officer in command at Port Townsend, Wash.).—Admitted December 22, 1898. Family history negative. Previous history: Cough every winter for five years past with dyspnœa. Fistula in ano. Chancre about twenty years ago, but no secondary symptoms. Present sickness dates probably from four or five years back. Suffers now from cough and expectoration and pain in chest. Physical signs of tuberculosis and tubercle bacilli in sputum. Discharged March 28, 1899. Readmitted May 3, 1899. Transferred from Seattle, where he has been under treatment since about April 3. Suffers greatly from attacks of indigestion. During July had intestinal hemorrhage. Frequent attacks of indigestion, usually followed by jaundice, probably the result of gallstones. Physical examination November 15, 1899, shows sunken supraclavicular spaces, especially right, winged scapulæ, deficient expansion, dullness over right apex, impaired resonance over left apex, diminished resonance over right side posteriorly to middle of scapula, increased vocal fremitus on right side, moist râles over left apex. Urine normal. No fever.—C. N. G.

Physical condition noted on arrival at Fort Stanton, N. Mex., as follows: Depressions over apices, with flatness. Marked bronchial breathing throughout lungs. Many foci of infection. Heart normal, but weak. Short winded on exertion. Poor appetite. Tubercle bacilli in sputum. About April 1 had a severe attack of articular rheumatism, which lasted about a month and was followed by a distinct aortic murmur, regurgitant. Has been constantly troubled with indigestion. April 11 had a severe rheumatic attack, which lasted more than a week. Appetite always poor. Examination June 26, 1901, showed crackling râles in right lung from apex to third rib anteriorly, and a few posteriorly. In left lung occasional râles about third rib. July 5, about 8 a. m., had a severe hemorrhage, from which death resulted in a few minutes.

Necropsy (*six hours after death*).—Extreme pallor of skin, moderate rigor mortis and post-mortem lividity. Calvarium not removed. Thorax: Enlarged glands in anterior mediastinum. Blood fluid. Heart small, elongated, and vertical in direction. No clots present. Aortic valves incompetent, showing calcareous masses of yellowish color at bases of right anterior cusps. Same substance at commencement of right coronary artery. Heart substance dark brown and shows excess of connective tissue, being in a state of brown atrophy. Pericardium adherent to left ventricle at posterior surface; its cavity empty. Adherent to right lung. Right lung light, spongy, and crackling anteriorly, extending beyond median line. Fibrous adhesions at apex, diaphragm, pericardium, and upper portion of middle lobe. Apex consolidated and lung had to be cut out. Nodules in other parts of lung. Bronchioles filled with blood. Large cavity in apex filled with blood and showing the broken vessel which was the cause of the fatal hemorrhage. Portions of lung not infected were emphysematous. Left lung adherent all over, pleural cavity being obliterated, and borders of lung emphysematous and containing shotty nodules. Great vessels normal, except aortic valves previously described. Nerve trunks normal. Diaphragm adherent to bases of lungs.

Abdomen: Omentum normal. Spleen, stomach, and pancreas bound together by fibrous adhesions. Kidneys in state of passive congestion, with cortices swollen. Suprarenal capsules, urinary bladder, organs of generation, and rectum normal. Duodenum adherent to head of pancreas. Stomach distended and adherent to liver, spleen, pancreas, and colon. Gall ducts patent. Gall bladder contained bile and two gallstones. Liver in state of cirrhosis and passive congestion. Solar plexus and mesentery normal. Small and large intestines normal, except for adhesions described. Great vessels normal.

C. R.
P. M. C.

J. McC.; age, 50; nativity, Pennsylvania; color, white; admitted to the United States Marine Hospital, Fort Stanton, N. Mex., September 1, 1901; died October 13, 1901.

Previous history (taken from clinical notes of medical officer in command at Pittsburg, Pa.).—Family history negative. Diseases of childhood while young. Present illness: Caught cold last February and has had repeated colds ever since, with profuse expectoration. Admitted to this hospital July 15, 1901. At present he complains of this cough and of dyspnœa. Night sweats every night. Anorexia. Mucopurulent expectoration. Examination: Greatly emaciated, very poorly nourished, skin of dead ashen hue, fingers "clubbed," dyspnœa on slightest exertion, diminished expansion of left chest, hectic fever, supra and infra clavicular spaces sunken, tactile fremitus exaggerated just below left apex, atheromatous arteries, dullness in left infraclavicular region, bronchial breathing, and rough and prolonged expiration in same. Respiration has cogwheel rhythm and is rough. Numerous moist and crepitant râles in left lung anteriorly and posteriorly. Heart sounds weak, but clear; no murmurs. Patient improved considerably under treatment and was discharged August 23, 1901.

Condition on arrival at Fort Stanton was very bad. He was then nearly in a state of collapse. Physical examination showed lessened movement of left chest, typical gums and nails, emaciation, skin dry and poorly nourished. Considerable cough and expectoration, and great weakness. Decided dullness in left upper lobe and apex and diminished resonance in right lung. Right lung showed a few crackling râles in apex and infraclavicular region. Left lung had marked bronchial breathing in upper lobe and diminished breathing in base. A few crackling râles in left apex and base. Apex beat of heart to left of nipple. Tricuspid first sound weak and indistinct; pulmonary second sound accentuated. Urine showed excess of phosphates, and specific gravity 1.030. Sputum contained numerous tubercle bacilli. This patient revived somewhat after a few days and was able to leave his bed frequently for some days following. September 20 rheumatic pains developed on both sides of chest, and these were followed about the 29th by a well-marked attack of sciatica on the left side. The left foot began to swell in a day or two, but was not painful, even after the swelling was very pronounced and the skin was tense and shiny. After about a week the sciatica and swelling of the foot largely subsided. During that time cerebral symptoms began to present themselves. Bad dreams or hallucinations were of frequent occurrence, causing him to cry out with fright or anger. The pulse was very weak, and strychnine was administered regularly. Occasional attacks of mental aberration were observed during the daytime also. About October 12 the stage of excitement began to be replaced by a semicomatose condition, in which the patient would lie for hours with mouth open and eyes half closed, mumbling to himself incessantly. Both feet now became swollen, but here the œdema was evidently that accompanying the last stages, and observed in most fatal consumptive cases. The sputum ceased to be ejected soon after the stupor began to manifest itself, and death occurred early in the morning of October 13.

Necropsy.—External examination: Body emaciated. Moderate rigor mortis and post-mortem lividity. Abdomen sunken. Right leg œdematous, and left also to a lesser degree. Both ankles and feet swollen, especially right. Skull well formed except at the lambdoid suture, which was depressed as much as ½ cm. In place of the external occipital protuberance is a marked depression. Calvarium removed. External depressions do not involve the inner table. The dura is markedly congested along the lines of all the sinuses. The dura is distended and separated from the brain by a quantity of a clear fluid. Adhesions are formed along the superior longitudinal sinus from the calloso-marginal fissure to the anterior parietal gyrus. The adherent surfaces showed several small gelatinoid tubercles. Extending outward along the middle cerebral arteries are several scattered tubercles. The entire brain and cord are bathed in the above-mentioned fluid. This fluid is almost clear, but contains some flocculent sediment. No other tuberculous areas are seen, however, than that mentioned along the longitudinal sinus. Upon section the lateral ventricles, as well as the ventricular system generally, are found to contain the above-mentioned fluid. The tela choroidea superior and inferior are normal. The base of the brain and the nerve trunks alike are not affected.

Thorax: The anterior mediastinum shows enlarged tuberculous glands. The thymus gland was not demonstrable. The heart is broad, and the apex is made up of both ventricles. The heart substance is softened and flabby, and the heart itself small. The endocardium is thickened. The mitral valve is contracted, and its orifice admits four finger tips. The tricuspid valve admits five finger tips, and the valve itself is thickened and contracted. The beginning of the aorta and the coronary arteries are calcareous, the latter and the veins being tortuous. The right lung is firmly bound down at the apex by fibrous adhesions, and shows a few fibrinous adhesions elsewhere. The lung is emphysematous in places, crepitates faintly in others, and is solid at the apex. The lower portions of the lung contain many nodules of varying size. The posterior portion of the lower lobe heavy, non-crepitant, œdematous, and in a state of hypostatic congestion. This portion, on section, is seen to contain fluid and blood. The left pleural cavity is obliterated by fibrous adhesions. The left lung generally is in about the same pathological condition as the right, but rather worse. The diaphragm is adherent to the base of the left lung. The great vessels and nerve trunks are normal. Abdomen: Omentum turned to the left, adherent to the parietal wall and to the spleen. The spleen is small, wrinkled, irregular, and cuts with increased resistance from increase of the interstitial fibrous tissue. The kidneys, suprarenal capsules, urinary bladder, organs of generation, rectum, duodenum, and stomach normal. The gall bladder is adherent to the colon. The liver is of moderate size, the left lobe being adherent to the diaphragm. Section shows the centers of the lobules darker than the periphery. The solar plexus not examined. The mesentery, small and large intestines, and the great vessels are normal.

Anatomical diagnosis.—Tubercular cerebro-spinal meningitis (hydrocephalus); chronic pulmonary tuberculosis; hypostatic pulmonary œdema; chronic pleuritis; cardiac hypertrophy and dilatation; arterio-sclerosis of aorta; chronic splenitis; passive congestion of liver.

H. K. P.
C. R.
P. M. C.

J. W. H.; age, 46; nativity, Delaware; admitted to United States Marine Hospital, Baltimore, Md., November 11, 1901; died November 27, 1901.

Necropsy (thirteen hours after death).—Body of male, white, of average height, much emaciated; no distinguishing marks. Post-mortem lividity and rigor mortis marked.

Lungs: Right, adhesions anteriorly, laterally, and posteriorly; apex and base free. Tissues soft; number of cavities size of walnut in apex; and tubercular nodules and miliary abscesses throughout entire lung. Left, adhesions laterally and anteriorly; apex, base, and posterior surface free. Large abscess size of fist occupies upper lobe; tubercular nodules and miliary abscesses throughout remainder of lung. Pericardium adherent on left to lung; sac of normal appearance and contains 90 c. c. of clear, watery fluid. Heart: Weight, 275 grams; pale, smooth, flabby; no fatty tissue; left ventrical darker than right; valves normal. Omentum small, retracted; entire absence of fat. Intestines normal; mesenteric glands enlarged and small number observed to be in state of suppuration. Appendix placed postero-laterally and pointing upward and backward. Liver: Normal appearance; weight, 1,450 grams. Gall bladder contracted and contains small amount (10 c. c.) of fluid. Kidneys: Right, normally placed; weight, 135 grams; capsule nonadherent; cortex considerably thickened and cuts with considerable pressure; tissue not broken down by pressure, Left, normally placed; weight, 140 grams; capsule nonadherent; cortex thickened less than right, and cuts with considerable pressure. Spleen small, weighs 175 grams and tissue somewhat harder than normal.

H. R. C.

G. H. W.; age, 29; nativity, Maine; admitted to United States Marine Hospital, Fort Stanton, N. Mex., September 24, 1901; died October 1, 1901.

Previous history.—(Taken from clinical notes of medical officer in command, New York.) Admitted August 15, 1901. Was first admitted February 24, 1901, with what was apparently acute catarrhal bronchitis, and was discharged February 21, improved. Again admitted March 29, 1901, showing signs of tuberculosis and bacilli in the sputum. Discharged at own request April 29, improved. Family history negative. Enteric fever, diphtheria, and measles in youth; no venereal diseases. Present sickness dates from about four years ago. Began in slight colds, which became more and more refractory until first hemorrhage in February last. Symptoms since then those of severe bronchitis, at times with shortness of breath and cough; no pain or night sweats, and general condition very good. Physical examination: Chronic inflammation of middle ear of right side, and a portion of the drum seems deficient. Hearing very poor on that side. Body well nourished. Diminution of normal pulmonary resonance over right apex. Crepitant and sonorous râles on both sides, front and back. Crepitant râles limited to the apices, front and back, with the sonorous râles at base and sides. The normal inspiratory murmur increased in intensity and expiration is prolonged. No extensive areas of consolidation found or any pleuritic adhesions. Heart normal. Tubercle bacilli in sputum.

Condition on arrival at Fort Stanton was apparently good on general inspection. Was physically examined two days later, but in that interval severe asthmatic symptoms had developed to such an extent as to largely obscure the typical signs of tuberculosis. Numerous râles of various kinds were heard and many of these seemed to be typical of tuberculosis, but in view of the patient's asthmatic condition a more careful examination was postponed until this should have subsided. He stated that he had frequently been troubled with asthmatic attacks, some having been very severe. His condition became rapidly worse and it was evident that it was very serious. Dyspnœa and weakness became excessive, especially the former. The urine on arrival contained a slight amount of albumen, with specific gravity 1.028. The sputum contained numerous well staining tubercle bacilli. The administration of stimulants gave little or no relief and death occurred October 1 at about 10.30 p. m.

Necropsy.—External examination: Œdema of legs, thighs, and eyelids. Considerable post-mortem lividity. Rigor mortis well marked. Injection of superficial veins. Fair amount of subcutaneous fat. Thorax: Ossification of the seventh costal cartilages. Thymus gland not demonstrable. Anterior mediastinum contained enlarged tuberculous glands. Heart enlarged and contained much subpericardial fat. Aortic and pulmonary valves competent to the water test. Mitral valve competent, admitting three finger tips. Tricuspid valve incompetent, admitting fingers. Right ventricle contained black clots, was dilated, and its myocardium increased. Edges of tricuspid valve retracted. Left ventricle hypertrophied. In beginning of aorta a few hard yellowish masses. Myocardium of interventricular septum was softened and fatty, this fatty material being more prominent toward the pericardial surface. Pericardium adherent to lungs and its cavity contained some clear straw-colored fluid. Lungs did not meet in median line. Right lung adherent by strong fibrous adhesions at apex, anterior wall, posterior border, diaphragm, and pericardium. Right apex consolidated. Lower lobes feebly crepitant anteriorly, but solidly infiltrated posteriorly. Section showed much frothy fluid and mucus in the bronchi. Left pleural cavity obliterated by fibrous adhesions, except at anterior border, which was emphysematous and contained an encapsulated tubercle. Left apex solidified and showed old fibrous stellate scars. Lower half of lower lobe solidly infiltrated. Faint crepitation in middle portion of lung. Section showed frothy fluid and mucus in the bronchi. The great vessels and nerve trunks were in normal condition. Diaphragm adherent to bases of lungs.

Abdomen: Omentum free and in normal condition. Peritoneum smooth and shining. True pelvis contained a moderate amount of a clear, straw-colored fluid. Spleen in normal condition. The right kidney showed stellate scars on its external surface; indistinct cortical markings; cortex swollen, fatty, and congested; capsule stripped readily. Left kidney in same condition. Suprarenal capsules, urinary bladder, organs of generation, duodenum, stomach, and gall ducts normal. Liver of normal size, mottled, yellowish-gray in color; on section cuts hard; lobules are fatty, with centers darker than periphery. Pancreas, solar plexus, mesentery, small and large intestines, and great vessels normal. The vermiform appendix contained an ovoid fecal stone about 1 c. c. from the entrance and larger in caliber than the lumen of the appendix.

Anatomical diagnosis.—Tuberculosis of mediastinal lymph glands, chronic fibrous pleuritis, chronic pulmonary tuberculosis, cardiac hypertrophy dilatation of right ventricle, tricuspid insufficiency, fatty infiltration of myocardium, passive congestion with fatty infiltration of liver, acute degeneration of kidneys.

H. K. P.
C. R.
P. M. C.

Pulmonary tuberculosis.

P. L.; age, 35 years; nativity, Austria; transferred from Savannah, Ga., by Department orders and admitted to the United States Marine Hospital, Wilmington, N. C., July 31, 1901, with disseminated pulmonary tuberculosis.

Treated with creosote, europhen, forced feeding, forced respiration in open air. Patient died November 15, 1901.

Necropsy (*eight hours after death*).—Undersized man; body generally emaciated; no specially distinctive marks. Brain anæmic, in other respects normal. Pericardial sac contained about 50 c. c. fluid. Heart muscle pale, flabby, both cavities eccentrically hypertrophied; weight, 250 grams. Left lung bound completely to diaphragm and thoracic wall; contained two large cavities; the rest was studded with tubercles; removal in toto not practicable. Right lung weighed 770 grams. Pleura greatly thickened; contour nodulated, extensively adherent; two small cavities at apex; tubercular throughout the remainder. Liver, as usual in such cases, was enormously enlarged, weighing 1,800 grams; markedly fatty. Gall bladder contained 25 c. c. normal bile. Right kidney weighed 150 grams; capsule nonadherent; naked-eye appearance normal. Left kidney weighed 160 grams; in same condition as right. Spleen weighed 410 grams; was considerably enlarged; had three deep sulci along lower border; pultaceous and very dark upon section. No tubercular involvement of mesentery. Other organs normal.

J. G.

Tubercle of lung.

W. C.; age, 40; nativity, Pennsylvania; admitted to Marine Hospital at Fort Stanton, N. Mex., June 14, 1900; died August 5, 1901.

Previous history.—(Condensed from clinical notes of medical officer in command, San Francisco, Cal.) Admitted November 6, 1899. Family history negative. Previous history: Diseases of childhood, two attacks of gonorrhea, and syphilis in 1884. Present sickness of two years' duration, began as hard cold, persisting. Recently been losing weight. Has free expectoration, anorexia and occasional night sweats. Physical examination: Left apex dull, with bronchial breathing and moist râles. Râles in left base and right upper lobes. Heart action rapid. November 20, had a severe pain in lower part of left chest, and sputum tinged with blood. December 1, suffering with pain in toes of right foot. Has a local cyanosis of foot. Steadily became worse and gangrene resulted. December 28, leg was amputated about its middle. Wound healed by primary intention. Returned to medical ward. Has gleet from a former gonorrhea. A small abscess formed in perineum and was incised March 29; it healed rapidly. April 10, physical examination shows dullness over both lungs in areas. Cough and expectoration. Tubercle bacilli in sputum. Improved somewhat under tonic and stimulative treatment.

Physical condition on arrival at Fort Stanton: Typical chest, nails, and gums; cough and dyspnœa; left lung dull throughout and has crackling râles in large numbers; same in right upper lobes. Heart action rapid. Was a very serious case on arrival. The general condition gradually became worse. Stomach and intestinal symptoms were very troublesome, and emaciation became extreme. Had several hemorrhages from the bowels. But in spite of the general depression the lungs showed much improvement as regarded moist râles, which diminished very much. But cough and expectoration were considerable. During the last two months he complained of paroxysmal pains, with smothering sensation about the heart, nearly every day, and begged for morphine. During these spells the heart action remained unchanged, and close observation in other ways did not bear out the patient's claims. As the after effects of the morphine were bad, it was decided to try placebos of distilled water. These latter gave the happiest results, relieving pain and inducing sleep of five or six hours' duration, without any disagreeable after effects. Later, the placebos were improved by adding strychnia, which conferred some temporary strength and benefit. About a week before death he claimed that sight was failing in the right eye, and a day or two later said it had entirely gone. Death occurred on August 5 at about 10 p. m.

Necropsy.—Body emaciated. Right leg amputated below the knee. Post-mortem lividity and moderate rigor mortis. Calvarium not removed. Thorax: Anterior mediastinum showed nothing of interest. The thymus gland was not demonstrable. Heart normal. Pericardium adherent to left lung. Left lung entirely solid and much shrunken. Right lung small, but had much functional tissue remaining. Its color was pale and section showed many signs of healing by scar-tissue formation. The lung emphysematous and to left of median line at anterior border. Pleural cavities obliterated—the left by firm fibrous adhesions, and the right by separable adhesions;

great vessels and nerve trunks normal; diaphragm adherent to bases of lungs. Abdomen: Absence of abdominal tuberculosis; omentum normal; spleen enlarged from passive congestion; right kidney normal; left kidney compressed and flattened above from pressure of enlarged spleen. Supra-renal capsules, urinary bladder, organs of generation; rectum and duodenum normal; stomach dilated; gall ducts patent; liver in state of passive congestion. Pancreas solar plexus, mesentery, small and large intestines, vermiform appendix, and great vessels normal.

Microscopical examination.—No evidences of tuberculosis were found in the tissues of the right eye.

C. R.
P. M. C.

W. C.; age, 29; nativity, Pennsylvania; admitted to United States Marine Hospital, Fort Stanton, N. Mex., August 27, 1901; died September 6, 1901.

Previous history (taken from clinical notes of medical officer in command at Detroit, Mich.).—Family history negative. Typhoid pneumonia ten years ago. Last winter was in county hospital at Toledo, Ohio, for pleurisy for three months. Cough began then and has been growing worse ever since. Present condition: Admitted to hospital complaining of severe sore throat. Had a similar attack about six weeks ago, lasting for three weeks. Relieved, and did not complain again until last Tuesday, when throat commenced to get sore again, and at present is unable to speak above a whisper, and can not swallow anything but liquids. Has lost about 50 pounds since last winter. Physical examination: Inspection—body fairly well nourished, tongue coated, pharynx and larynx considerably congested, apices of lungs sunken, breathing difficult. Palpation—vocal fremitus greater on right side. Percussion—higher pitch on right side of chest, hyper-resonance on left side. Auscultation: Vocal resonance exaggerated over left chest, tubular breathing. Subcrepitant and occasional sibilant râles heard over nearly all right lung. Heart apparently normal. Tubercle bacilli found in sputum. By August 27 he had considerably improved.

Condition on arrival at Fort Stanton: Very weak and complaining of great pain in head and back of neck. Examination showed increased vocal fremitus and dullness in right apex and upper lobe. Crackling râles in whole extent of right lung anteriorly and from apex to about eighth spine posteriorly. Left lung had a few scattered moist râles in upper lobe. Heart apparently normal. Urinalysis negative. Sputum contained many long and some branched tubercle bacilli. The patient revived considerably for a few days under liberal use of stimulants, and the pains in the head, throat, and neck subsided largely. But a few days later all the above symptoms returned and weakness became excessive, death occurring on September 6, 1901. It was subsequently learned that this patient had been formerly under treatment for epilepsy in a private hospital. His appearance and actions clearly indicated a neurotic tendency.

Necropsy (*seven hours after death*).—Inspection of body showed some emaciation, moderate rigor mortis, and post-mortem lividity. Calvarium removed, revealing dura mater adherent over the posterior part of the frontal lobe and anterior portion of the parietal lobes, at the vertex and immediately overlying the longitudinal fissure. Underlying this adherent membrane the pia, covering the upper frontal, ascending frontal, and ascending parietal convolutions back as far as the calloso-marginal fissure, is found to be roughened by small almost transparent bodies of 0.5 mm. in size and which upon section are gelatinous in structure. These nodules are largest and most numerous just upon the edge of the longitudinal fissure, but they extend outward in scattered groups along the blood vessels of the pia for a distance of 8 cm. from the median line. Throat: The mucous membrane of the pharynx congested and covered by small nodules—chronic pharyngitis. The posterior borders of the aryepiglottic folds infiltrated, thickened, and ulcerated. Mucous membrane of larynx eroded, reddened, and rough. Mucous membrane covering vocal cords in same condition. Ventricle of larynx filled with green sputum, as also upper part of trachea, the mucous membrane of which was in a condition similar to that of the larynx.

Thorax: Costal cartilages of second ribs ossified. Thymus gland not demonstrable. Anterior mediastinum showed nothing of interest. Heart enlarged laterally. Right ventricle dilated and its myocardium softened and thickened. Anterior angle of right ventricle shows five small superficial whitened areas of scar tissue involving the visceral pericardium. In apex of right ventricle a dark grayish adherent clot of hazelnut size with a distinctly softened center with fluid contents. Endocardium roughened and not easily separated from clot. The left ventricle, on section, shows hardening of the muscle substance from increased fibrous tissue. A thrombus similar to that in the right ventricle was found behind the anterior cusp of the mitral valve. Both ventricles contained black blood clots. The mitral orifice admitted three finger tips. The tricuspid orifice admitted five finger tips loosely. The septum between the anterior and posterior cusps of the aortic semilunar valves contained a hard calcareous substance of the size of two grains of wheat. Beginning of aorta showed several small, elevated, yellowish, calcareous areas. One of these had broken down into a small ulcer with elevated borders. The pericardial cavity contained a considerable quantity of a clear straw-colored fluid. Lungs meet in median line. Left pleural cavity showed adhesions at apex, posterior border, and to diaphragm. Right pleural cavity obliterated by fibrous adhesion. Right upper lobes consolidated, lower showing many separate nodules. Left lung consolidated from apex to second rib, and rest of lung contains some nodules. Internal border emphysematous.

Great vessels: Venous trunks leading to right auricle injected. One plaque in pulmonary artery. Nerve trunks normal. Diaphragm adherent to bases of lungs and to liver.

Abdomen: Omentum normal. Spleen adherent to peritoneal coat all over. External surface torn on removal of organ. Torn surface seen to be roughened, thickened, and fibrous. Increased resistance on section from excess of fibrous tissue—fibrosis of spleen. Kidneys normal, also supra-renal capsules. Urinary bladder distended with turbid urine. Organs of generation, rectum, and duodenum normal. Stomach distended with gas. Gall ducts patent. Liver enlarged, congested, and in condition known as "nutmeg" liver, the centers of the lobules being darker than periphery. Liver adherent to diaphragm on left side. At right outer angle of liver occurred a hard mass about 2 by 1 c. c. projecting beyond outer surface at site of a depressed area. Section showed it to be calcareous in center, outer portions consisting of white fibrous tissue. A second nodule found to be the same in structure. Liver surface smooth, but showed a number of depressed white scars. At the longitudinal fissure were some enlarged lymph glands, showing caseation. Pancreas normal, but showed enlarged lymph glands about its head. Solar plexus not examined. Mesentery contained some enlarged lymph glands. Small and large intestines and great vessels normal.

Anatomical diagnosis.—Tubercular pachymeningitis (interna); chronic pharyngitis; chronic tubercular laryngitis; tracheitis; hypertrophy and dilatation of right ventricle, with tricuspid insufficiency, mural thrombosis of both ventricles, arteriosclerosis of beginning of aorta and aortic semilunar valves, with fibrous myocarditis; chronic pulmonary tuberculosis; fibrous obliterative pleuritis (bilateral); interstitial and peri-splenitis; passive congestion of liver; tubercular lymphadenitis of mesenteric and retroperitoneal glands.

C. R.
P. M. C.

R. N.; age, 26; nativity, Norway; admitted to United States Marine Hospital, Fort Stanton, N. Mex., August 29, 1901; died October 9, 1901.

Previous history (taken from clinical notes of medical officer in command, San Francisco, Cal.)—June 12. Family history negative. No previous sicknesses except colds. Present sickness: Sixteen months ago caught cold from continued exposure. A cough supervened and has continued until present time. No hemorrhages, but nummular sputum. In last three months has lost 10 pounds in weight. Pain in chest on inspiration. Dyspnœa and occasional night sweats and insomnia. Before admission had some diarrhea. Physical examination: Emaciation, flat chest, sunken above clavicles, winged scapulæ, comparative immobility of right side, apex beat to left of nipple, increased vocal fremitus over right apex, dullness from right apex to third rib and from left apex to fourth rib, superficial cardiac area normal, bronchial breathing over apices, sibilant râles over right apex.

Condition on arrival at Fort Stanton, bad. Typical appearance, diaphragmatic breathing, increased vocal fremitus over upper parts of lungs, dullness in same and in left base, crackling râles in lungs from apex to base anteriorly, but very few posteriorly, left lung worse than right. Urinalysis negative. Sputum contained many long, slender, well-staining tubercle bacilli. Had troublesome diarrhea on arrival, followed soon by cramps, nausea, and vomiting. Diarrhea became very severe and was continuous, though there were a few spells of partial relief. Became steadily worse in every way and died October 9, 1901.

Necropsy.—Body emaciated; moderate rigor mortis; considerable post-mortem lividity; bed sore over right trochanter. Thorax: Anterior mediastinum showed enlarged tuberculous glands. Thymus gland not demonstrable. Heart small and apex made up of the right ventricle mostly. Heart broad laterally. Goose-fat clots in right auricle and pulmonary artery. Right ventricle dilated and its myocardium hypertrophied. Tricuspid valve smooth but retracted, its orifice admitting five finger tips. Mitral orifice admitted three finger tips. Beginning of aorta roughened. Some brown atrophy of inter-ventricular septum. Layers of pericardium smooth and shining. Lungs did not meet in median line. Pleural cavities obliterated by fibrous adhesions. Right lung emphysematous at internal border. Apex scarred and strongly adherent. Right upper lobes entirely consolidated, while lower contains scattered areas of consolidation and emphysematous portions. Left upper lobe consolidated entirely, with partial consolidation of lower lobe. Great vessels and nerve trunks normal. Diaphragm on left side reached to lower border of fourth rib at nipple line on right side to fourth interspace.

Abdomen: Omentum showed absence of fat. Spleen enlarged and adherent to stomach internally. External surface gray, showing beneath capsule a network of lighter shade. Section shows excess of fibrous tissue. Malpighian bodies very prominent. Kindeys, suprarenals, urinary bladder, organs of generation, rectum, and duodenum normal. Stomach small and collapsed. Gall ducts open; gall bladder adherent to colon. Liver: Left lobe adherent to diaphragm at the superior border, enlarged, mottled externally by whitened meshwork of fibrous tissue beneath the capsule. Section showed increased resistance. Internal surface mottled. Fibrous tissue of portal spaces much increased. Scattered nodules, small, yellowish white and encapsulated, found containing caseous material, but these were not numerous. Pancreas normal. Solar plexus not examined. Mesenteric glands enlarged and caseous. At many points the afferent lymph channels showed caseous masses. Ileum shows transverse ulcerations from mesenteric border, about one-half to 3 inches apart. The vermiform appendix lay behind the cæcum and showed points of ulceration along its mesenteric border. Head of colon showed walls that were thickened, injected, and ulcerated internally. The large intestine contained a few small ulcers at different points.

Anatomical diagnosis.—Chronic pulmonary tuberculosis; chronic obliterative pleuritis; hypertrophy and dilatation of right heart with tricuspid insufficiency; unilobular cirrhosis of liver; chronic splenitis; tubercular ulceration of ileum, cæcum, and vermiform appendix; tubercular adenitis of mesenteric and retroperitoneal glands.

C. R.
P. M. C.

H. B.; colored; age, 39; nativity, Missouri; admitted to United States Marine Hospital, Fort Stanton, N. Mex., May 28, 1901; died August 10, 1901.

Previous history (taken from clinical notes of medical officer in command at New Orleans, La.).—Family history negative. Personal history: Denies specific history. Had pneumonia in March, 1901, and was treated by physician of his association. Never entirely recovered, but been steadily losing weight and strength, and has cough and expectoration. Appearance decidedly tubercular. Physical examination showed depression of supra and infra clavicular spaces, with increased vocal fremitus, flatness at apices, bronchial breathing, with coarse râles and increased vocal resonance at apices, chiefly at left. Sputum examination positive; heart and urine negative. Afternoon temperature.

Condition on arrival at Fort Stanton, bad. Typical nails and gums. Increased vocal fremitus on right side, dullness in right upper lobes, crackling râles nearly throughout right lung, and the same in left upper lobe. Heart apparently normal. Urinalysis negative. Tubercle bacilli found in sputum. Suffering very much with dyspnœa and weakness. Some slight improvement was experienced for a short time after arrival here, as is often the case with even the worst cases temporarily, but as soon as the brief exhiliration had passed, the retrograde process became very rapid. Dropsy supervened, and weakness and dyspnœa became very marked. Death occurred August 10, 1901.

Necropsy.—Moderate rigor mortis. Feet and legs œdematous. Marked emaciation. Penis abnormally long. Thorax: The anterior mediastinum showed nothing of interest, and the thymus gland was not demonstrable. Pericardium adherent to right lung and diaphragm. Right upper lobes consolidated and several cavities found in apex. Lower lobe contained many separate areas of consolidation and was only slightly crepitant. Right pleural cavity obliterated. Left lung consolidated from apex to third rib, and adherent at apex and posterior border and to the diaphragm. Lower lobe contained many shotty nodules, but was crepitant to some extent, the crepitant tissue being emphysematous. Pericardium contained a considerable amount of clear and straw-colored fluid. Heart small but right heart hypertrophied. Left heart normal except that the entire heart muscle contained an excess of fibrous tissue, and the myocardium showed some brown atrophy. The great vessels and nerve trunks were normal. The diaphragm was adherent to the bases of the lungs and to the pericardium.

Abdomen: Omentum fibrous, very much contracted, devoid of fat, and containing caseous lymph nodes. The spleen is enlarged and nodular externally. The organ cuts with increased resistance. The Malpighian bodies stand out prominently. The interstitial fibrous substance is markedly increased. No appearance of caseation is seen. Right kidney smooth externally; capsule strips readily. Upon cut section is congested and shows four or five small areas of caseation in the cortical substance; another area size of a pea involves one of the medullary pyramids. Left kidney more free from adhesions externally and contains no signs of tuberculosis. Suprarenal capsules normal. Urinary bladder distended with a moderate amount of turbid urine; mucous membrane normal. Organs of generation, rectum, duodenum, stomach, gall ducts, normal. Liver: The parietal peritoneum covering the right lobe is injected, has lost its glistening appearance, and contains many scattered miliary tubercles. The left lobe is adherent to the diaphragm above through separable fibrinous adhesions. The adhered surfaces are roughened by small gelatinoid tubercles of pin-head size. This lobe is adherent also at its posterior border to the omentum below and the stomach internally. Beneath the peritoneal coat of the liver and lying adjacent to the areas of adhesion are several small scattered tubercles of similar characteristics. The right lobe of the liver is also adherent to the diaphragm; these adhesions again being separable. The liver is much enlarged. The capsule is thickened, showing light fibrous bands. Upon section the liver substance cuts with increased resistance and shows interstitial fibrosis. A few yellowish areas of hazelnut size, which upon section are strongly encapsulated by fibrous tissue and contain a homogeneous gummatous substance in a state of partial liquefaction. The pancreas was negative. Solar plexus not examined. Mesenteric and retroperitoneal lymph glands were enlarged, some showing caseation. The small and large intestines and the great vessels were normal. Vermiform appendix normal.

Anatomical diagnosis.—Chronic fibrous pleuritis; chronic pulmonary tuberculosis; tubercular peritonitis; chronic interstitial hepatitis; encapsulated hepatic gummas; chronic interstitial splenitis; tuberculosis of right kidney.

H. K. P.
C. R.
P. M. C.

P. J.: Age, 29 years; nativity, Finland; admitted to the United States Marine Hospital, Cleveland, Ohio, May 30, 1901; died November 14, 1901.

History.—Father died of cancer of throat. Cause of mother's death not known. Personal history: Nine years ago had an attack of bronchitis which lasted about six weeks. In December, 1900, he was taken sick with chills and a cough. He went to a hospital and was treated ten days. He felt better, with the exception of a cough, which rapidly became worse, and on January 28, 1901, he was admitted to the United States Marine Hospital, Buffalo, N. Y., where he remained until he was transferred to Cleveland, Ohio. He was very weak, and has lost 30 pounds in weight. For the last eight weeks he has had night sweats. Physical examination shows thorax of small size; muscles are small and poorly developed. Subcutaneous fat is small in amount. There is retraction of supra and infra clavicular spaces. Dullness on percussion over upper lobe on left side. Prolonged expiration over left apex. Blowing breathing heard over both lungs, and a large number of moist râles, both anteriorly and posteriorly. Expectoration is profuse—muco-purulent nummular sputum. On microscopical examination are found numerous tubercle bacilli, staphylococci, and elastic tissue.

Pulse is regular, small, and rapid. Heart sounds are normal. Appetite is poor. Bowels are very loose. Tongue is slightly coated, and at times he has nausea and vomiting after eating.

Necropsy (*eighty hours after death*).—Rigor mortis absent. Hypostasis present over dependent parts and lower part of abdomen; much emaciated. Abdomen is scaphoid. Muscles are very small. Subcutaneous fat is absent. Firm pleural adhesions over anterior and posterior surfaces of right lung. Lung is voluminous; large amount of anthracosis. In apex of right lung is a cavity about the size of a hen egg, filled with milky pus. Below this, in the upper lobe, was another abscess about the size of a hickory nut, filled with bloody pus; left lung was contracted and firmly adherent on all surfaces with firm adhesions. The upper lobe was a complete cavity, with walls one-half millimeter thick, filled with pus. Pericardium was adherent on all sides. Auricles were filled with firm jelly clots. Heart valves were normal. Stomach was distended and filled with thin milky fluid. Intestines were collapsed; colon contained small amount of milky colored fluid. Mucosa was normal. Liver was normal in size and color. Gall bladder collapsed and empty. Spleen was normal. Pancreas showed post-mortem decomposition. Left kidney was normal in size; fatty capsule contained only slight amount of fat; fibrous capsule not adherent. Adrenals showed post-mortem decomposition.

W. J. P.
A. D. F.
R. F. K.

J. K.; age, 26 years; nativity, Finland; admitted to the United States Marine Hospital, San Francisco, Cal., December 30, 1901; died January 17, 1902.

History.—The patient has been sick three months. He has a bad cough, profuse muco-purulent expectoration, dyspnœa, night sweats, and frequent headaches. He has lost much flesh since his sickness commenced. The physical examination shows that the vocal fremitus is increased over the whole of the right lung, and there is also dullness over this lung. The respiratory sounds are roughened over both lungs. The sputum contains tubercle bacilli. Temperature, 36.4°; respirations, 22; pulse, 112. January 15 the patient suddenly became worse, his temperature rose to 38°; respirations, 28; pulse, 120; he had a profuse diarrhea and there were many loud râles in his chest. He died from exhaustion January 17 at 9.20 p. m.

Necropsy (twelve hours after death).—Height, 168 cm.; rigor mortis is well marked. The abdominal wall is 1 cm. thick. The omental fat is scanty and the omentum is adherent to the parietal wall in the left iliac region. The intestines are of a grayish color. Brain: Weight, 1,350 grams; measurements, 19 by 13 by 9 cm. Tissue apparently normal. The pericardium contains 50 c. c. of serous fluid. Heart: Weight, 332 grams; measurements, 10 by 9½ by 4 cm. The wall of the right ventricle is 0.75 cm. thick; left, 2 cm. thick. The valves are normal. There is a yellow clot in the right auricle extending into the right ventricle. Both lungs are adherent to the chest wall, so much so that it is impossible to extract them from the chest. There is a large cavity in the left lung extending from the apex to its base; this cavity is filled with frothy sanguineous fluid. The right lung contains several cavities the size of hen eggs. Spleen: Weight, 220 grams; measurements, 12 by 8 by 3 cm. Tissue friable. Trabeculæ prominent. Left kidney: Weight, 238 grams; measurements, 12 by 8 by 5 cm. Tissue contains a number of cheesy tubercles. Right kidney: Weight, 187 grams; measurements, 11 by 7 by 4 cm. Tissue apparently normal. There are a few cheesy tubercles in the ileum. Liver: Weight, 1,700 grams; measurements, 29 by 17 by 10 cm. Left lobe crescent shape, extending upward to a sharp point which is attached to the diaphragm. The liver tissue is brown in color, oily to the touch, and cuts with only slight resistance.

W. G. S.

J. C.; age, 44; born in New York; admitted to the United States Marine Hospital, Wilmington, N. C., November 26, 1901, having been transferred from Brunswick, Ga.; died January 6, 1902.

Seaman came to this hospital with a history of pulmonary tuberculosis dating from some time in the year 1896. When seen the disease was in an advanced state, the right lung being in a cavernous condition. The larynx was involved, which caused a great deal of suffering. Treatment was palliative only.

Necropsy (fourteen hours after death).—Body greatly emaciated. Rigor mortis slight. Brain and meninges normal. Heart weight, 320 grams. Muscle pale and flabby; wall not thickened, though there was a moderate degree of excentric hypertrophy. Mitral valve not competent, owing to considerable thickening of one leaflet. Right lung not removable by reason of adhesions, the greater portion being destroyed by tubercular excavation. Left lung weighed 870 grams, was studded with tubercles except at base, and contained a small cavity at the apex. Liver weighed 1,770 grams, was firm, even hard to touch, enlarged, congested, and distinctly fatty. Spleen, of pale, slaty blue externally, on section was very dark, and markedly friable; weight, 400 grams. Naked eye appearance of kidneys normal; weight of left, 175 grams; right, 170 grams. A few retro-peritoneal glands were involved. Other organs normal.

J. G.

ENTERIC FEVER.

J. L.; age, 32; nativity, Norway; admitted to marine ward, St. Vincent's Hospital, Norfolk, Va., July 6, 1901; died July 13, 1901.

Family history.—Negative. Patient has always enjoyed good health until a month ago, when he was seized with a severe chill followed by fever and a profuse perspiration. Since then he has felt weak and suffered from headache. On admission, temperature, 40.2° C.; pulse, 126; respirations, 32. The tongue is tremulous, somewhat pointed and red at tip and edges, and covered posteriorly with a whitish fur. Mouth feels dry. Skin dry and sallow. The expression is dull and heavy, the conjunctivæ are clear, and the pupils dilated. Bowels constipated. Slight tympanites; no abdominal tenderness; no rose-colored spots. Physical examination: Palpation, percussion, and auscultation negative. Urine, free; specific gravity, 1.024; acid; color, dark amber; albumen present, but no casts. The Ehrlich Diazo reaction was not obtained.

Microscopical examination.—The blood: No plasmodium malariæ. Reduction in number of both red and white cells.

Widal reaction.—There was no fresh bouillon-culture of the typhoid bacillus at hand for this test.

Treatment.—Tepid bath and ice cap to head. Absolute rest in bed and the enforced use of the bedpan. Milk diet, about 175 c. c., every two hours. ℞ Hydrarg. chlor. mite, 0.30 gm; sodii bicarb., 0.66 gm; M. Sig.: Give at 9 p. m. ℞ Magnesia sulph., 25 gm. Sig.: Give at 5 a. m., and cleanse mouth with diluted listerine.

Take temperature every three hours, and sponge patient whenever temperature reaches 39.1° C.

July 7, a. m.—Patient very restless during the night and also slightly delirious about 2 a. m. Two small stools this a. m. The discharges are thin, offensive, and of a yellowish color. During the night four cool sponge baths were given. Temperature ranged from 39.6° C. to 40.4° C. before baths, from 39.4° C. to 39.6° C. after baths. The pulse is rapid and weak. Heart sounds rather feeble. The belly is distended with gas, and gurgling is detected in right iliac fossa. A few rose-colored spots, which disappear on pressure, are observed on abdomen and chest. The skin is dry, and the cheeks are somewhat flushed. Urine retained, and withdrawn by soft catheter. ℞ Strychnia sulph., 0.002 gm. Sig.: Every four hours. ℞ Tinct. digitalis, 0.5 c. c. every four hours; also turpentine stupes to abdomen. Continue temperature records, sponge baths, etc., as ordered.

July 8, a. m.—Better results from baths during yesterday and last night. Patient rested quietly, about an hour after each bath. Bowels moved twice since last note. Temperature, axillary, in past twenty-four hours, ranged from 39.5° C. to 39.8° C., before baths; 38.4° C. to 38.6° C., after baths. Pulse, 136; respirations, 33.

July 9, a. m.—Patient rested fairly well during yesterday, but he was restless and mildly delirious during the night, requiring constant watching. Tympanites is more pronounced; one small stool since yesterday a. m. Temperature, 40.1° C.; pulse, 139, weak, and dicrotic. The baths given yesterday and last night reduced temperature from one to two degrees. Continue strychnia and baths; also ℞ Whisky 30 c. c. Sig.: Every four hours. Spts. turpentine 0.66 c. c., every four hours. Also give enemata of milk of assafœtida, with long rectal tube.

July 9, p. m.—Hurried respirations, 36 per minute; slight cough with scanty expectoration, and bronchial râles. Enema administered at noon brought away small stool and considerable gas. Stool contained coagulated milk. Diet changed to peptonized milk and beef tea.

July 10, a. m.—Patient passed a very restless night. About 3 a. m. his skin felt cold, especially the feet and legs; an hour later he perspired freely. No marked change in temperature, pulse, and respirations. Cough is somewhat more troublesome and rales are now heard over entire chest. Only one small stool since yesterday. Ordered enemata of turpentine, glycerine, and soapsuds, to be given with high rectal tube.

July 11, a. m.—Nervous symptoms marked last night. This morning there is twitching of the tendons, picking at the bed clothes, and coma vigil. Otherwise there is no apparent change in the patient's condition, except that he now refuses nourishment.

July 11, p. m.—Enemata of assafœtida brought away considerable gas with small stool.

July 12, a. m.—Patient passed a very restless night and required constant watching to keep him in bed. This morning stupor and the other nervous symptoms are pronounced. He is failing rapidly.

July 12, p. m.—While catheterizing patient this noon there was a large involuntary movement of the bowels. Patient is not so restless, but is very weak this evening.

July 13, a. m.—Patient's condition showed no apparent change until 4 o'clock this morning, when he passed into a state of coma and a quiet death at 8 a. m.

Necropsy (eight hours after death).—Height, 1.70 meters; a well-built muscular man. Slight post-mortem lividity of shoulders, back, and buttocks. General nourishment good. Pupils, slightly dilated. Heart (weight after opening), 330 grams. Substance rather pale and somewhat softened. Pericardial sac contained normal fluid. All valves competent. Left ventricle slightly hypertrophied and contains a little coagulated blood. Right ventricle contained organized clot, which extended into vessels. Other arteries and veins normal. Nares and larynx and trachea normal. Lungs: Left, weight, 390 grams; somewhat œdematous, with hypostatic congestion; pleural cavity normal. Right, weight, 570 grams. The tissue is dark in color and smooth, with scattered areas of collapse. Pleural cavity, slight adhesions externally to chest wall. Peritoneum, normal. The tongue, pharynx, œsophagus, and stomach normal. Small intestines are distended with gas, and contain small quantities of thin and offensive fecal matter resembling pea soup. A catarrhal inflammation exists throughout the bowel. A few glands of the jejunum are hyperæmic. Peyers glands of the lower part of the ileum are pale and prominent. Three patches have broken down, leaving behind irregular oval ulcers with swollen edges, and with smooth bases formed by the submucous coat—the longest diameter parallel with the length of the bowel. The mucous membrane of the large intestine and cæcum shows catarrhal changes. The vermiform appendix and rectum are normal. Liver: Vessels somewhat congested. Color normal, weight 1,970 grams. Gall bladder and ducts normal. Pancreas normal; weight, 76 grams. Kidneys: Left, weight, 230 grams; enlarged and vessels engorged. Right, weight, 220 grams; enlarged and congested. Both kidneys show cloudy swelling. Pelvis and ureters, bladder and urethra and prostate normal. Suprarenal bodies normal in appearance; left, weight, 3.5 grams; right, weight, 3 grams. Spleen, weight, 315 grams. The gland is enlarged and filled with blood; color, grayish red. Brain, weight, 1,435 grams. No coarse changes observed in the brain or its membranes. Other organs not examined.

J. B. S.

T. M. (negro); age, 22 years; nativity, South Carolina; admitted to marine ward, Mercy Hospital, Pittsburg, Pa., July 15, 1901; died August 5, 1901.

History.—Patient had felt feverish and weak for two weeks before admission. Had diarrhea for a week previous, but kept at work. Very weak when admitted. Profuse diarrhea, high hectic fever, mental hebetude, abdominal tenderness with tympanites, spleen enlarged. Widal reaction positive. Patient became weaker and weaker, notwithstanding stimulation and frequent baths. Had no stamina whatsoever. Said that he wanted to die and was going to die. Delirious for several days before death. Was closely watched for perforation of bowel, but no signs appeared. No hemorrhages. Heart's action became weaker and weaker, failing entirely at 10 p. m. August 5, 1901.

Necropsy (*fifteen hours after death*).—External examination: Body that of a negro man about 20 years of age; height, 1.65 meters. Post-mortem rigidity marked. No suggillation. Tympanites slight. No external injury. No foreign bodies in body cavities, except some brownish froth which exudes from the nose when the chest is compressed. Internal examination: On incising the abdominal wall it is seen that the subcutaneous tissue is very yellow. Chest: Upon removal of the sternum the pericardium is seen to be very yellow. Ten c. c. of dark straw-colored fluid in pericardiac sac. The heart, having stopped in systole, is contracted and feels hard. The valves are competent. No atharoma. Weight of heart, 250. Both lungs are seen to be greatly congested about their bases posteriorly, being filled with a dark-brown serum. The lungs are crepitant throughout, and are otherwise normal. All parts float when put in water. The right lung weighs 500 grams; the left, 390 grams.

Abdomen: On opening the abdominal cavity the stomach is seen to be enormously distended. It contains two quarts of a dark-brown serum. It is otherwise normal in appearance. The liver has the exact color of a yellow (vitrified) brick. It weighs 2,040 grams. Its substance is extremely friable, crumbling in the hand upon pressure. The gall bladder contains 50 c. c. of clear serum. The spleen is greatly congested and enlarged. On section a brownish serum exudes. It weighs 500 grams The kidneys weigh 210 grams each. There is nothing about them worthy of note except that their membranes are yellow. The intestines are greatly congested, especially the ileum, which is of a dark-slate color—very dark over the Peyer's patches. These can be seen and felt, being very thick and hard to the touch. There are about twenty enlarged Peyer's patches. They were raw looking, ulcerated on the inner surface, but no perforation could be found. The appendix was about the size of a lead pencil and 20 cm. long—very large and long—but otherwise normal. This appears to have been a case of acute toxæmia from the enteric poisons.

R. C. C.

INFLAMMATION OF INTESTINES, CATARRHAL.

I. L., white; age, 39 years; single; nativity, Sweden; occupation, sailor; admitted to United States Marine Hospital, Baltimore, October 17, 1900; died July 5, 1901, at 4.30 p. m.

Family history.—Father, dead, cause unknown; mother, dead, cause, tumor of throat; brothers, several died in infancy, one in adult life, of meningitis, and one was drowned; sisters, two living and in good health; two dead; one died of some form of fever and one in childbirth.

Previous personal history.—Patient has had all diseases incident to childhood, and also malarial fever, "swamp fever," gonorrhea, syphilis, and soft chancres (chancroids), with inflammation of lymph glands of groin.

Clinical history.—Until the spring of 1899 patient's general health had been very good, at which time pain developed in abdomen, slight in character but constant in duration, and associated with diarrhea. Concurrent with the abdominal troubles was mild cough and gradual loss of flesh.

Condition of patient when admitted to United States Marine Hospital, Baltimore, was as follows: General nourishment, poor; temperature, 38.4° C.; pulse, 90 and feeble; slight "hacking" cough. Aside from a few bronchial râles, physical examination of lungs revealed nothing worthy of special note. Tongue coated; appetite poor; diarrhea, stools mucopurulent in character. Pain in abdomen constant and widely diffused, though more pronounced in the region of rectum, and but slightly exaggerated on palpation. Microscopical examination of sputum for five succeeding days failed to show the presence of the tubercle bacillus. The condition of patient as just described continued from week to week with little or no variation; now and then symptoms would increase in severity, now and then abate and give evidence of improvement, each relapse, however, being more severe than the preceding one. Evacuation of bowels varied in number from three to ten daily; stools varied in constancy, being as a rule, however, mucopurulent and always scanty. Patient's temperature ran a very irregular course throughout the whole time of illness, not unlike that of tuberculosis, although physical examination of lungs, as well as microscopical of sputum failed to bear out the suspicion of pulmonary involvement. Since January, 1901, patient declined rapidly and died July 5, 1901, at 4.30 p. m.

Necropsy (five hours after death).—General nourishment poor; post-mortem lividity absent; rigor mortis beginning; pupils dilated and equal. Circulatory organs: Pericardial sac contained 20 c. c. straw-colored fluid.

Heart very flabby; weighed 180 grams; all valves competent. Respiratory organs: Left lung weighed 220 grams; slight adhesions at apex; on section upper lobe showed presence of small, hard nodules. Right lung weighed 320 grams, and, like the left, showed on section small, hard nodules. Abdomen and contents: Peritoneum contained numerous tubercular nodules, omentum matted to the intestines. Stomach empty; blood vessels markedly engorged, as were also the mesenteric vessels. Small intestines slightly inflamed. Large intestines presented every characteristic of "tubercular colitis." Mucous membrane highly inflamed; here and there large and small ulcers, some annular, others ovoidal or irregular. The inflammation was more marked at splenic flexure of colon and at the sigmoid flexure. The intestinal wall was thickened throughout its entire length. Liver weighed 1,180 grams; normal. Gall bladder distended. Spleen 190 grams; normal in appearance. Kidneys: Left weighed 175 grams, normal as to position and macroscopic appearance. Right weighed 150 grams; normal in position and appearance. Bladder empty and normal. Brain not examined.

R. L. McN.
H. R. C.

Inflammation intestines, chronic catarrhal ulceration.

R. S.; age, 27 years; nativity, Germany; admitted to the United States Marine Hospital, Chicago, Ill., July 27, 1901; died August 29, 1901.

History.—Last Christmas he arrived in New Orleans, La., from New York. He developed malarial fever—tertian type—a month later. Treated himself with quinine; had four or five paroxysms. One week after last paroxysm had an attack of diarrhea—six to eight stools a day, at times. Had been drinking freely of iced water directly from the Mississippi River. After suffering about a month from diarrhea he began treatment with a local physician; condition remained unchanged. Left New Orleans and came North about 1st of April, 1901. Was admitted to the marine ward of St. Mary's Hospital, Milwaukee, remaining about ten days; improved. He never noticed any blood in stools before coming to this hospital. Stools were watery, brownish, containing some lumps; watery element was never transparent. Has lost 35 pounds in weight. Appetite is good; digestion poor—lienteric stools. No tenderness over abdomen. No fever. No tenesmus. Occasionally has headache. Absolute rest in bed ordered. Milk diet. General tonic. Intestinal antiseptic.

July 28, 1901.—Syncope; some headache. Only one stool to-day. Drinking water limited. Acidi sulph. aromat. dil. 0.62 in every cup of drinking water.

August 13.—Stools not so watery as formerly. Weight, 126 pounds.

August 17.—Four bowel movements during night. Microscopical examination of feces does not show presence of amoeba coli. Rectal injection of 2 per cent boric acid, 1,500 c. c.; given 4 o'clock every evening.

August 28.—Vomiting; unable to retain anything on stomach. Nutrient enema.

Temperature, subnormal; collapse. Pulse small, thready, weak. Strychnia sulphate, 0.002, hypodermatic. Enema of hot water. Foot of bed elevated. Legs bandaged. Hypodermatic injection of camphorated oil, 0.62; repeated three hours later. Extremities and face cold and wet. Rallied for few hours, then died in second similar attack.

Necropsy (*twenty hours after death*).—Height, approximately, 173 cm. Body well developed, but emaciated. Post-mortem lividity in arms and shoulders posteriorly; more marked in left. Chest: No fluid in pleural cavities; slight adhesions at apex of right lung, also posteriorly. Left pleura, strong adhesions at apex and posteriorly. Lungs very friable. Hypostatic congestion marked. Right lung, weight, 410 grams. Left lung, weight, 390 grams. Pericardium normal. Heart pale, flabby. Heart blood dark, partially coagulated. Clots in right heart. Endocardium smooth. Mitral, tricuspid, and both sets of semilunar valves smooth and of normal appearance. Coronary arteries patent and intima smooth.

Abdomen: Peritoneum, normal appearance. No fluid in free sac. Vermiform appendix reaches into right pelvic excavation, on psoas muscle; bound down by adhesions. Length of appendix, 14 cm. Spleen: Weight, 225 grams; of normal appearance. Liver: Weight, 1,590 grams; no abscesses; normal color and consistency. Stomach walls thickened. Mucosa dark red, injected, congested. Greater curvature presents multiple pin-point hemorrhages. Duodenum and jejunum slightly congested. Ileum: Mesentery markedly injected. Mucosa presents areas deeply injected; other areas necrosed and lying in shreds, or entirely denuded, exposing a grayish-yellow gelatinous floor; submucosa. This necrosed mucosa is quite soft and easily washed away. There are sections where the wall is apparently thickened, and others where it is necrosed and considerably attenuated. Colon: Condition here much the same as in ileum, but lesions are more extensive. There are also twelve or fifteen round and oval ulcers, sharply defined, with undermined edges; necrosed base; approximately 1 to 2 cm. in diameter. These ulcers bear no relation to the direction of the intestine, being found mostly on posterior wall in rectum, sigmoid, and in descending colon. Mesenteric glands not enlarged. Kidneys appear normal. Brain: Normal; convolutions well devoloped; weight, right hemisphere, 570 grams; left hemisphere, 520 grams.

F. R. G.
H. W. S.

Ulceration of intestines.

N. K.; age, 58; nativity, Kentucky; admitted to the United States Marine Hospital, Louisville, Ky., July 24; died July 31, 1901, at noon.

Examination of the blood upon admission revealed the presence of the plasmodium malaria. Patient was very weak; had been suffering from chills and fever for several days, accompanied by supraorbital headache. Diarrhea was present, but of unknown duration, ten to twelve stools daily, profuse yellowish watery evacuations; no tenesmus. Under the administration of quinine sulphate, 0.60 grams three times a day, he began to improve, the profuse sweating checked almost completely, and he was able to take more food. The intestinal inflammation was treated by a diet of buttermilk and the administration of opium, bismuth, and naphthol B. The number of stools was reduced from 12 to 4 daily. This condition continued for several days. He was then given three 5-gram doses of effervescent magnesium citrate, which produced several free evacuations, which showed the discoloration of bismuth for the first time. As subsequent events showed, this was a mistake, for the diarrhea returned with increased severity, rapidly exhausting the patient.

Necropsy (*two hours after death*).—Skin over the greater portion of the scrotum and penis white; phimosis present. Rigor mortis not present, nor hypostasis. Upon section of the body the abdominal and thoracic organs were found to be in their normal positions, but the right lung, liver, and spleen were found to have numerous adhesions, which rendered these organs difficult to remove. The stomach was distended with gas, its lower border extending below the umbilicus. The great omentum extended to within 7 cm. of the pubes. The vermiform appendix lay behind and external to the cæcum, and was about 4 cm. in length. Heart: Pale and flabby, light-brown clots in its cavities, valves competent by hydrostatic test. Aorta: Intima of the ascending portion contained small thickened patches and a few small ulcers. Pulmonary artery normal. Weight of heart, 660 grams. Right lung adherent throughout, substance of the lung grayish in color and studded with numerous dark spots of carbon deposit. Weight, 650 grams. Left lung, no adhesions; in color and appearance similar to the right. Weight, 650 grams. Spleen, enlarged, dark red in color, adherent to the diaphragm, very friable, and difficult to remove. Was badly torn during the operation. Pancreas normal. Right kidney, substance pale; capsule peeled off easily, very little distinction between cortex and medulla. Weight, 490 grams. Left kidney similar in appearance to the right. Weight, 510 grams. Ureters normal. Bladder normal; contained 300 c. c. of dark-red urine. Urethra pervious. The prostatic portion appeared to be slightly contracted. Liver: Pale in color, adherent to the diaphragm. Weight, 1,880 grams. Gall bladder normal, its duct pervious. Stomach and small intestines pale; contained a small amount of yellowish fluid. The large intestine contained numerous ulcers of varying size, from 1 cm. up to 3 cm. in diameter, distributed in an irregular manner over its internal surface, and involving only the mucus coat. The ulcers were covered with a grayish slough, and some of them had reddened edges, as if they had begun to heal. Very few of the sloughs had suppurated. The ulcers were traced down through the rectum, but the anus and sphincters were not involved, which perhaps explains the absence of tenesmus as a prominent symptom.

A. C. W.
M. K. G.

HERNIA, INGUINAL, OBLIQUE, COMPLETE, IRREDUCIBLE.

Strangulated hernia.

GANGRENE OF GUT.

L. S.; age, 53; nativity, Norway; was admitted to the United States Marine Hospital, port of San Francisco, Cal., August 13, 1901; died August 13, 1901, as ambulance reached hospital from out-patient office.

History.—Patient was sick nine days previous to admission, during which time he vomited considerably. On August 13, 1901, when he was taken to the out-patient office in the ambulance, every sign of impending death was present. Patient was conscious and answered questions rationally; breathing irregular and gasping; radial pulse absent; face cold and pallid; hands cold and shriveled. Patient was given 15 c. c. of whisky diluted, and sent to the hospital. En route he was given in all about 50 c. c. of whisky at several times. On arrival at the hospital the patient died before he could be removed from the ambulance.

Necropsy (*thirty-nine hours after death*).—The body is that of a well-nourished adult, white male; suggillations well marked; rigor mortis well marked; black and blue discoloration over the lower part of the scrotum. Brain, normal. Pericardium, normal. Heart, weight, 435 grams. Heart muscle, normal. Valves, competent by hydrostatic test. There is an organized clot in the right ventricle extending through the auricluoventricular opening to the right auricle. Aortic and pulmonic valves are normal. Tricuspid leaflets are thickened and nodular. The mitral valves are nodular and shrunken. Aorta shows small calcareous plates near the root. Lungs and pleura: Left lung, normal; weight, 660 grams. Right lung, weight, 690 grams; adherent to the pleura by strong bands widely distributed over the entire lung surface; the lung itself is normal in appearance. Liver: Weight, 1,970 grams; normal. Spleen: Weight, 85 grams; somewhat pale in color. Kidneys: Right, weight 215 grams; somewhat pale in color. Left, weight 200 grams; somewhat pale in color. On section of scrotum an old hernia was discovered. The sac contained a sero-sanguineous fluid. A knuckle of the lower part of the ileum was found caught in the left inguinal ring. The ring was contracted on the loop, which was mahogany colored; the peritoneal covering of the loop was rough and friable. The small intestine above the hernia is distended. There are also some small adhesive bands between two loops of small intestine.

L. S. S.
C. W. V.

TYPHILITIS.

S. G. (colored); age, 38 years; nativity, Tennessee; admitted to United States Marine Hospital, Louisville, Ky., September 23, 1901; died October 2, 1901.

History.—Patient was brought to hospital about 7 p. m. in ambulance from one of the river steamers. Patient stated that he had been taken with "cramps" two nights previous. Pains continued throughout night, attended with some vomiting. The next day patient was considerably easier, but colicky pains recommenced that night and had been present at intervals ever since. Vomiting, too, had recommenced and was persistent. Patient had one small action of bowels. Patient states that he has had several cramping attacks before, but none as severe as present one, though the first one, four years ago, had been severe.

Physical examination.—Patient lies on back, legs flexed on abdomen. Eyes closed, face rather pinched in appearance, retches at short intervals, breathing rapid and shallow, pulse slow, 56, but very hard; temperature, 37.5. Abdomen distended and tender on right side. A swelling detected in right hypochondrium rather oblong in shape and reaching to below level of umbilicus on right side. A tentative diagnosis of obstruction was made, and orders given for preparation of patient for laparotomy on following day. The morning of 24th showed condition of patient unchanged, and a laparotomy was decided upon. Patient was anæsthetized by chloroform, changing to ether, and the abdomen was opened by a 6-inch median incision with umbilicus for center. As soon as peritoneum was opened loops of greatly distended and partially discolored intestines began to force themselves out, under great pressure; likewise large quantities of a sero-fibrinous fluid, with flabby lymph particles, of which fluid the abdomen was full. Such intestines as had protruded were covered by warm towel and a search made for an obstruction. The intestine was followed up and down; and although one loop was markedly darkened and bluish, yet was patent. No other point showed such darkening, and this was probably a small volvulus and partial obstruction. The right side of abdomen was then explored, and a mass about cæcum was discovered, though small intestine leading up to it was not markedly distended. On examining this a pus cavity was ruptured, pus was mopped up, and appendix was found at bottom of cavity curled on itself and adherent. Appendix was removed and gauze drainage left at bottom of wound.

It being absolutely impossible to replace the intestines, a prominent loop was punctured and a large quantity of gas allowed to escape. Site of puncture was closed over with Lembert suture, and the intestines were then replaced.

The abdominal walls of the patient being very thick, strong, and unyielding, made this one of the greatest difficulty. The wound was then closed, except at lower end of wound for drainage. Patient was taken off table suffering severely from shock; stimulants were applied and patient began to rally, though suffering severely. Morphine was given and patient rested well that night. The following morning patient had rallied fairly well, was able to take a little beef tea, but vomited later in the day. Bowels moved well the next morning, the 26th, and from then on patient began to improve daily until about the sixth day. The outer dressing was changed on the first and second days, the gauze removed on the third day from the depths of the wound. Adhesions seemed to have formed and a rubber drainage tube was substituted.

On about the sixth day after operation the patient began to sink. Hiccough, which had been present at intervals since operation, recommenced, and patient grew steadily worse, dying about 8 a. m. on morning of October 1, the eighth day after operation.

Necropsy (*three hours later*).—Body of male, black, of medium stature and fair musculature. Rigor mortis well developed. Abdomen partially retracted, unhealed scar of laporotomy wound in center. Usual median incision made, sternum removed, and pericardial sac opened. About normal amount of fluid in sac. Heart normal in size, coronary vessels very distended. Large veins filled with a dark semifluid blood. White clots in heart. Valves of heart normal and competent. Weight of heart, 285 grams. Lungs moderately pigmented, strong adhesions to pleura at both apices. Weight of right lung, 420 grams. Weight of left lung, 235 grams. Scar of laporotomy wound, while healed on surface, was gangrenous beneath. Intestines dry and a little darker than normal; adherent to each other, but not firmly. Strong adhesions about appendical abscess cavity. Another pus pocket beneath cæcum was discovered. Stump of appendix noted. Next, stomach and intestines removed; stomach normal. The sigmoid flexure of colon was found on right side of pelvis, adherent by dense bands of fibrous tissue to brim of pelvis and to region of abscess cavity. Lumen of sigmoid was not more than one-half inch in diameter and not dilatable. This was clearly a partial obstruction, and had clearly predisposed to attacks of constipation, with attending distension of the intestines, with consequent pulling and tugging at walls of the latent abscess, to whose walls it was adherent. The liver was normal in appearance and weighed 1,650 grams. Kidneys normal. Weight of right, 165 grams; of left, 170 grams. Brain and other organs not examined.

T. D. B.
G. B. Y.

AMOEBIC DYSENTERY.

S. B.; age, 18; nativity, North Carolina; admitted to marine hospital, Mobile, January 30, 1902.

Family history.—Both parents dead; father from tubercle, mother from typhoid. Has neither brother nor sister.

Personal history.—Has never before had any serious illness. When admitted to hospital had been ill nineteen days. Has been a sailor for three years. Just prior to his present attack he left his vessel some distance from New Orleans and attempted to reach that city by going through the swamps. He was for some days lying in the marshes, drinking the impure water and sleeping on the ground. Was attacked with dysentery before reaching New Orleans. The patient stated that at times he had had as many as twelve to fourteen actions per day, and says that blood appeared in the stools on the fifth day. When admitted was much emaciated, suffering from tenesmus and a constant desire to go to stool. A microscopical examination of stools revealed the amœba coli. No blood was observed in stools after his admission to hospital. The discharges were dark, contained mucus, and were extremely fetid. Various remedies were tried, with little or no effect, such as nitrate of silver injections, arsenite of copper, ipecac preceded by laudinum and to be repeated in two hours, no fluid to be given between times. The copper was stopped when the ipecac treatment was begun. Injections of quinine sulphate and acid sulphuric were given. This was preceded by cocaine. Turpentine stupes were frequently applied to the abdomen. Normal salt solution was given 500 c. c. by hypodermoclysis, strychnine sulphate three times daily. Later bismuth subnitrate was given every three hours, the ipecac treatment having been stopped. Morphia and atropia were given hypodermatically for the relief of pain. Normal salt solution was repeated. Peroxide of hydrogen was tried for the continued vomiting, also solution of cocaine. Neither had any effect. Iodine and carbolic acid were also given, with some effect. The patient retained a small quantity of beer. The diet consisted of white of eggs, brandy, bovinin, and wine. Death occurred afternoon of March 1, 1902.

Necropsy (*seventeen hours after death*).—Body of a white youth apparently 18 years of age, greatly emaciated. Rigor mortis marked. Echymosis on back and sides. Pupils dilated. The heart muscle is pale and flabby. Ante-mortem clot in right ventricle and auricle. Valves apparently normal. Weight of heart, 300 grams. The lungs are slightly congested. Weight of right lung is 325 grams. Weight of left lung is 350 grams. The spleen is slightly enlarged, bluish black in color, and firm in consistency. Its weight is 200 grams. The capsule of both kidneys peel easily. The right kidney is somewhat hammer shaped and its hilum is like a long slit. It is apparently normal, and its weight is 170 grams. The left kidney is somewhat congested, and the line of demarcation between the cortical and the medullary substance is well marked. Its weight is 180 grams. The urinary bladder is distended with fluid. The omentum is darkly stained and is much congested. The stomach is greatly distended and contains about about 500 c. c. of black fluid. Its mucous membrane is much congested and is covered with sticky mucus. The liver is chocolate in color, congested, bleeds easily on section, and is apparently undergoing acute fatty degeneration; its weight is 2,500 grams. The gall bladder is distended with thick black bile, sirupy in consistency. The pancreas weighs 60 grams. The intestines are black in color. The mucous membrane of the ascending and transverse colon is ulcerated, covered with a thick, dark-grayish membrane, presenting the appearance of diphtheretic dysentery. At two points on the transverse colon it is so badly ulcerated that it tears on lifting. The descending colon is also badly ulcerated and tears on lifting. The lower portion is nearly ulcerated through, leaving only the peritoneal coat. All of the colon is covered with a dark-grayish membrane, and has ulcerations through to serous coat in many places. All mesenteric glands are very much enlarged, red in color, and their contents in many places are softened. The small intestines are ulcerated for 2 feet about from cœcum, and the grayish membrane is found to some extent for some distance farther. The brain and the spinal cord were not examined. Diagnosis: Amœbic dysentery.

J. G. T.
W. P. M.

RUPTURE OF LIVER.

W. P.; age, 17; nativity, England; was admitted to United States Marine Hospital, Mobile, Ala., September 28, 1901; died September 30, 1901.

History.—Has always enjoyed good health. Entered hospital a few hours (four) after reception of injury; says he fell about 20 feet, striking on right side among logs and other débris in water; has some bruises on head and face; was unconscious only a few minutes; no bones broken. Complains of great pain in right side and abdomen; lies on left side, and pain is exaggerated if he attempts to assume the right-side position. Right side, over site of liver, somewhat swollen, and very tender on palpation. Patient very pale, with an expression of suffering depicted in every feature. Pulse, 88; temperature, normal; respiration, 24. Was given 0.015 gram of morphine sulph. hypodermically. During the night he vomited considerable food which was undigested.

September 29.—Still complains of pain in right side; abdominal muscles tense, but no great amount of tympanitis; passed catheter and drew considerable quantity of urine, which appeared normal. Afternoon: Pain persistent, muscles of abdomen stiff and hard, pulse rapid (120) and somewhat thready. 6 p. m.: All above noted symptoms exaggerated; pulse, 150; temperature, 38.6; respiration, 36. The diagnosis of rupture of the liver having been made, the patient was prepared at once for operation. Chloroform was used to produce anæsthesia. An incision about 12 cm. long was made in median line, and as soon as the cavity was opened venous-looking blood poured forth; the abdominal cavity was filled with this blood. The intestines were examined and found normal, though distended with gas. A tear in liver could be easily palpated. The patient was extremely weak, and all during operation normal salt solution was being injected into tissues of thigh. A lateral incision about 5 cm. in length, at right angles to first incision and extending to right side, beginning just below navel, was necessary. The tear was so extensive and the patient so weak that to prolong the operation would prove fatal, so the wound was packed with gauze, the intestines flushed with normal salt solution, and the abdominal cavity closed. After effect of anæsthetic had passed patient was conscious, and wanted something to eat, and his thirst was intense. He vomited several times during the night, and next day at 11 a. m. he died.

Necropsy (*four hours after death*).—Body that of a medium-sized, well-developed, muscular youth. Wound of abdominal wall in median line extending down about 12 cm., and branch at right angles extending to right side about 5 cm. Slight wound over right tibia and several cuts on right side and various parts of right leg. Wound on forehead just above right eyebrow. Pupils dilated; bloody froth issuing from nose and mouth; rigor mortis well marked; body opened by incision extending from manubrium to symphysis pubis. On opening abdominal cavity, considerable amount of bloody fluid escaped. Pericardial sac contained about 15 c. c. of fluid. Heart weighs 210 grams; normal. Left lung weighs 330 grams; upon incision, a bloody, frothy fluid exudes from cut surface; right lung weighs 420 grams and in about the same condition as left, both being œdematous; a few pleuritic adhesions on left side. Liver in situ; an extensive rupture on back part of under surface of right lobe, near its posterior border; the laceration is stellate, with ragged edges, and extends through liver. Extent of tear, anteroposteriorly, about 8 cm.; in width, 5 cm. Glison capsule extensively torn; a few blood clots in lacerated tissue of liver; a small tear near lobus quadratus, about 2.5 cm. long. Gall bladder distended. Spleen normal; weighs 120 grams. Stomach somewhat distended; intestines glued together in places with recent fibrous exudates; otherwise normal. Right kidney weighs 120 grams; line of demarcation between cortical and medullary substance properly marked; capsule peels easily. Left kidney weighs 120 grams; normal in appearance. Urinary bladder empty.

W. P. M.
J. T. B.

GUNSHOT WOUND OF LUNG AND LIVER.

J. B.; age, 30; nativity, Arkansas; admitted to United States Marine Hospital, Memphis, Tenn., July 4, 1901; died November 6, 1901.

History.—About thirty-six hours previous to admission to hospital patient was shot while aboard the steamer *R. E. Lee.* The bullet, fired from a distance of about 18 feet, passed through the right arm behind the humerus and entered the chest wall at the point of intersection of the posterior axillary line with a line drawn horizontally through the right nipple. On admission the condition of the patient was very low, pulse weak and compressible, respiration hurried and shallow, temperature 39.2. Physical examination showed dullness over right lung, most marked posteriorly; vesicular murmur heard anteriorly, but feeble. Some tenderness over liver and slight expectorations tinged with blood. The area of dullness over lung increased until it extended over entire lung. The treatment was entirely supportive, but no improvement in his condition was noticed.

Necropsy (*thirty hours after death*).—Brain, sinuses congested, membranes adherent over vertex; subarachnoid fluid increased; a number (6 or 7) of thin, bony plates, the largest about 1 cm. long, were found in the falx cerebri. Weight of brain, 1,290 grams. Right lung entirely airless, pressed inward and backward by blood (1,500 c. c.) in pleural cavity. Weight of lung, 480 grams. The bullet had entered between sixth and seventh ribs at the point indicated above, passed downward, emerging at the base, pierced the diaphragm, and entered the liver. Left lung normal; weight, 540 grams. Heart normal; weight, 430 grams; large chicken-fat clots in cavities of both sides. Liver: Weight, 2,450 grams. Bullet entered on upper posterior aspect of right lobe, and after traversing the thickness of the lobes for about 10 cm. passed

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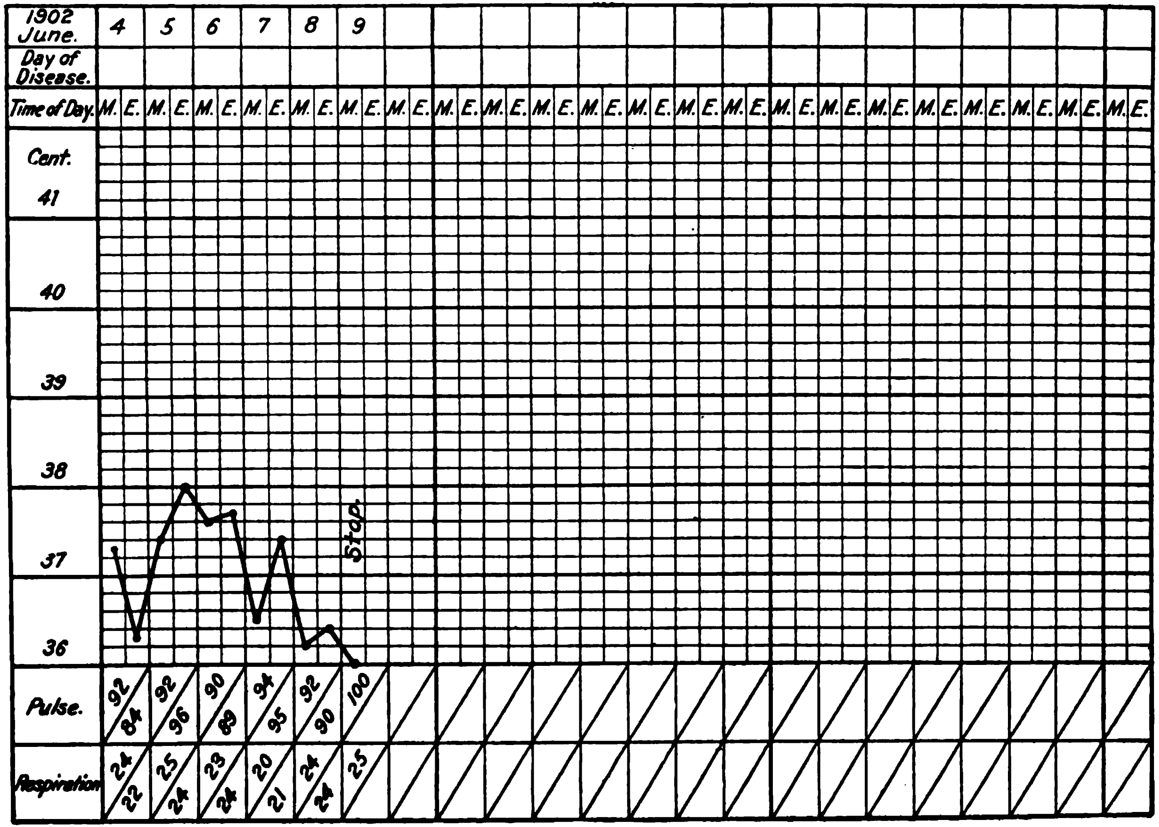
Name, J. B.; age, 60; disease, inflamation of liver.



out on its under surface just behind the transverse fissure, struck the vertebral column, and was found with its point directed upward in front of the vertebral column and behind the transverse duodenum. Abdominal cavity contained about 300 c. c. dark, tarry blood; no lymph or signs of peritonitis. Spleen normal; weight, 310 grams. Right kidney normal; weight, 220 grams. Left kidney normal; weight, 210 grams.

G. M. M.

INFLAMMATION OF LIVER—ABSCESS.

I. B.; age, 60 years; nativity, Canada; admitted to the United States Marine Hospital, St. Louis, Mo., June 4; died June 11, 1902.

History.—On admission the patient gave a confused history of general malaise, and desired relief of constipation, which had several times, for many years, annoyed him, and which had then persisted for six days. He was tall, and of robust though slightly emaciated figure, of jaundiced appearance. On examination no abnormality was detected in heart or lungs. His abdomen was quite prominent, very tense, and the lower line of the liver could be felt 10 cm. below margins of the ribs, hard, nodulated, and apparently extending entirely across the abdomen. Temperature, 37.3° C.; pulse, 92; respiration, 24; both of fair quality. He was bathed and given a mercurial laxative, followed by a saline purge. Small doses of bichloride of mercury, with occasional bromo-camphor pill, to quiet restlessness, were begun, and the patient seemed quite comfortable and cheerful. On his complaint that he had not slept at all for some weeks (not borne out by his appearance or behavior), bromide of potash in infrequent dose was followed by 1 gram of hydrate of chloral at 8 p. m. of June 9. He reported "several hours of refreshing sleep" at next sick visit. It was therefore repeated on June 10. On June 11, when approached by the nurse, he said he thought he would not go to the dining room for breakfast, but would eat later. At 8.10 a. m., on bringing him his medicine, the nurse found he had just died, apparently without a struggle. An interesting feature of the case was that the patient complained of nothing except insomnia, and cheerfully assisted in the light duties of the ward. An examination of his urine showed no albumen, but an immense precipitation of phosphates. Specific gravity, 1.025.

Necropsy (seven hours after death).—Body that of an elderly white male of good size, muscular, and somewhat emaciated. Abdomen somewhat prominent and quite hard; skin jaundiced and glossy; rigor mortis and post-mortem lividity well marked. On section of abdomen an abundant greenish-yellow fluid escapes, and an enormously enlarged liver is disclosed, occupying the entire width of the trunk. Connective tissue throughout extremely dense and that of the chest and abdomen evidencing former inflammation. Pleura normal, except corresponding to anterior surface of superior lobe right lung, where are old adhesions to chest wall. Lungs on section exuding serous froth; weight, left, 500 grams; right, 475 grams. The latter exhibited in superior lobe a few cheesy nodules of moderate size and a small area of emphysema; both lungs otherwise apparently normal, except for beginning atheroma of blood vessels. Pericardium lusterless; contains normal amount of fluid. Heart tissue of decided yellowish cast, somewhat flabby and distinctly fatty. Left heart full of post-mortem clots, right heart empty, valves apparently normal; weight, 250 grams. The liver is so firmly embedded in apparently the adhesions of old inflammation that it is with exceeding difficulty removed from the cadaver, and several portions were torn off and lost in effort. On examination no trace could be found of gall bladder, leading to the conjecture that it had ruptured at or before death, and had been torn away in the effort to remove liver. Liver diameters, transverse, 42 cm.; antero-posterior, 23 cm.; vertical, 12 cm.; of a bright purplish-red color, nodulated and honeycombed with numerous abscess cavities filled with cheesy or fluid grumous pus; weight, 6,500 grams. Kidneys fatty, capsules thin, strip readily. Left kidney pelvis loaded with fat; weight, left, 250 grams; right, 185 grams. Pancreas adherent to liver. Spleen somewhat larger than normal, showing exteriorly plaques of former inflammatory action; normal consistency; weight, 315 grams. Stomach and intestines evidently alcoholic. Bladder walls thickened; moderately full of dark ammoniacal urine. Urethra pervious. Skull at vertex and sides abnormally thin; dura mater very thick and strong. Brain quite wet; sulci well marked; weight, 1,450 grams.

J. M. G.

INFLAMMATION OF LIVER.

Cirrhosis, chronic (hobnail liver).

MALIGNANT DISEASE OF PANCREAS.

J. P.; age, 65 years; nativity, Denmark; admitted to the United States Marine Hospital, San Francisco, Cal., March 2; discharged May 2; readmitted May 3; died July 12, 1901.

History.—For six weeks previous to admission patient had been growing yellow; the stools were white; bowels constipated; appetite poor. Patient was forced to urinate frequently at night, but there was no pain.

Social and personal history negative.

The urine in repeated examinations showed a large amount of bile, with an absence of indican. At no time was there glycosuria.

On April 26, there was an intermittent pulse and indefinite abdominal pains.

May 3, the pulse was weak, the icterus was persistent, the stools were white and of a putty-like consistency, and a very offensive odor. Bile was present in the urine. The epigastric veins were becoming dilated. The area of liver dullness was diminished; the edge could not be palpated, and there was no tenderness over the region of the liver, though abdominal pain was present. To the general jaundice was added a bronzing of the skin of the face, hands, and forearms, which became very noticeable on June 18. At this time appeared ascites, which accumulated rapidly, necessitating paracentesis of the abdomen on June 27, when 3,500 c. c. of a greenish-yellow serous fluid were withdrawn. The fluid rapidly reaccumulated, but interference surgically was out of the question on account of extreme weakness.

On July 3 the pain for the first time became localized in the epigastric region, though patient complained of a feeling of discomfort more than actual pain. Patient very much wasted, with well-marked cachexia. From this date on patient rapidly sank into a comatose condition, the pulse became imperceptible at the radials and death supervened.

Treatment.—During the first two weeks treatment was directed toward stimulation of the liver and relieving of the constipation. Calomel, nitrohydrochloric acid, sodium phosphate, magnesium sulphate, and podophyllum were each employed as occasion demanded. During the remainder of patient's life large doses of magnesium sulphate were given to influence the ascites, while whisky and strychnine were used as supportives. At no time did the temperature vary 1° C. from normal. Pulse throughout small, soft, occasionally missing a beat.

Necropsy (twenty-eight hours after death).—Body much emaciated; skin jaundiced; face bronzed; two ulcers over sacrum; suggillations slightly marked; rigor mortis not marked; ascites present. Brain: 1,500 grams weight; normal in appearance. Pericardium normal. Heart: 210 grams weight; very small and anæmic; the valves normal. Left lung: 490 grams weight; normal. Right lung: Adherent throughout, particularly at base; 650 grams weight; normal on section. Abdominal cavity contains 4,000 c. c. of serous fluid. Liver: 1,830 grams weight; covered with yellowish nodular masses; parenchyma dark green in color; on section similar masses throughout; liver substance cuts easily. Bile ducts hard and infiltrated. Gall bladder contains 300 c. c. of an inky fluid. Pancreas: 310 grams weight. Entire organ hard and infiltrated. Head is occupied by an irregular nodular mass, which cuts with difficulty and contains a yellowish fluid. The mass is not circumscribed and has no capsule. The duodenum from a point 2.5 cm. from the stomach to its jejunal end is hard and infiltrated. Spleen: 115 grams weight; capsule strips; substance soft and pulpy. Right kidney: 215 grams weight; capsule very adherent; markings distinct; covered with nodules. Left kidney: 215 grams weight; capsule adherent; markings distinct; contains fewer nodules. Left adrenal: 4 grams weight; soft on section. Right adrenal: 12 grams weight; contains nodules. The center was soft and contained yellowish fluid.

J. N. F.
C. W. V.
J. M. G.

RENAL HEMORRHAGE FROM CYSTIC KIDNEY.

W. F. O'R., age 28, a native of the United States, was admitted to the marine division of the Buffalo Hospital of the Sisters of Charity on January 21, 1902, and died on February 2.

Family history negative. Personal history of diseases incident to childhood; two years previous to admission he fell and broke ninth and tenth ribs on right side; three weeks before entrance he again fell, striking against a stool his right loin; hemorrhage was quite free and he was treated in hospital at Cleveland, Ohio. Two days prior to present admission he experienced intense pain in right renal region, with swelling along the course of right ureter. There was free bleeding.

Status presens.—The man on entrance is almost bloodless, lips pale, skin clammy; over region of right kidney there is great tenderness, and this extends downward along the course of the ureter, this area being tense and fluctuating; the urine shows much blood. This fluctuating swelling in the inguinal region had existed the day before entrance, but had then receded after a very copious passage of bloody urine. Pulse, 90; temperature, 37.2° C.; respiration, 18. The patient was too depressed for any operative procedure, and measures were taken to limit the hemorrhage and restore circulatory tone; gelatin solution subcutaneously effecting the former.

On the morning of January 23 his condition was practically the same; pulse 98 and still very weak; chloroform anasthesia; incision in right loin, from twelfth rib to crest of ilium, at outer border of erector spinal, exposed a large tense sac, which proved, upon opening it, to be an immensely dilated kidney. The pedicel was clamped, ureter and artery separarately, and sac removed. It was filled with more or less recent clots. Its walls were composed of thickened renal capsule, with an occasional islet, not larger than 2 cm., of kidney tissue, composed almost wholly of connective tissue and miniature tubules. On the inner surface of this sac wall there radiated from the entrance into it of the vessels large corded venous sinuses, the walls much thickened; the caliber small. This was also the condition of the arteries, but to less extent. The sac was lined with pavement epithelium. On the outer aspect of the kidney sac two of these thick-walled veins were injured, and from these injured vessels the hemorrhage had occurred. The ureter was entirely normal. The question arose at the time of removal as to the length of time this condition had existed, and the opinion expressed that it was a congenital cyst (unilateral) of the kidney. Correspondence with his relatives elicited the information from an elder sister that as a child this patient had suffered from a "weakness of his water;" any unusual exercises producing "bloody water." During childhood's diseases this bloody water was noticed, and after several injuries as a larger boy. From this history it is evident that from lack of development of the right kidney, its fibrous tunic, continuous with its pelvis, became dilated, possibly with early urinary secretion, but more probably from early hemorrhages. Granting this, it is difficult to understand the early condition resulting in such immense dilation, 20 cm. by 12.5 cm. wide, since the ureter was entirely patulous. Later in the case temporary twisting of the pedicel from the weight of contained blood could have occurred, as on the day prior to admission, when the large inguinal swelling had emptied itself through the bladder. There was no evidence of any elementary division walls in the cyst, unless the remarkably thickened vessels would suggest a primary multilocular cyst, the divisions having disappeared by pressure, which would also account for the large size of the monocyst.

Prior to operation blood count showed 2,800,000 red cells and 7,600 white. Urine contained much blood and casts.

January 24.—There is cough without expectoration of pneumonic sputum, yet the lanceolate diplococcus is abundantly present; temperature 38.5° C. Wound irrigated with solution acetozone 1-40000.

25th.—Clamps removed and wound irrigated. It appears in good condition; no infection. Temperature 37.4° C.; pulse 100; 500 c. c. salt solution given under skin.

27th.—Temperature 40° C.; pulse 130; same tenderness in right inguinal region; wound granulating; no infection. Urine still has casts and a few blood cells.

29th.—Temperature 40.8° C; pulse 130; urine contains granular casts; a few blood cells and epithelium, sp. gr. 1.010. There is pain over the abdomen in the region of the gall bladder so persistent that an exploratory incision was made. The gall bladder, ducts, and the liver were carefully examined for a possible focus of suppuration, but none was found. The temperature remained high, and death occurred from exhaustion on February 1.

Necropsy.—Limited to seat of operation. There was no infection, but the tissues at the site of removed kidney were generally necrotic, this necrosis extending downward along the Psoas muscle. The peritoneum and intestines were normal; the left kidney was contracted and presented two retention cysts on anterior surface; capsule adherent; about the kidney the connective tissue was necrotic, and this extended along Psoas muscle as on the right side; there was no evidence of such necrotic extension by way of the tissues in proximity to the spinal column; it was limited to the peri-renal connective tissue. Other organs were normal.

E. W.

DIABETES MELLITUS.

C. S.; white; age, 33 years; nativity, New York; admitted to the United States Marine Hospital, New Orleans, La., October 31, 1901.

The patient was suffering from paraphimosis and chancroids, and also complained of a gradual loss in weight and strength, extending over a period of about one year, of excessive and continued thirst, and of the large quantities of urine he passed daily.

Physical examination shows him to be much emaciated and a condition of great anæmia to be present. His urine contained 4 per cent of sugar.

The paraphimosis quickly subsided under local treatment. The patient was placed on a diabetic diet, but failed to improve. The urine increased steadily in quantity until he was passing about 6,500 c. c. daily, the quantity of sugar having sunk to 2.4 per cent till November 5, when the quantity of urine was 5,000 c. c. and the sugar 2 per cent. On the evening of November 5 the patient became comatose and remained in this condition until the following afternoon, when he did at 6.30 p. m.

Necropsy (*sixteen hours after death*).—Body of a poorly nourished but well-developed man; height, 170 cm.; weight, 60 kilograms. Rigor mortis marked. Usual post-mortem suggillation. The fourth finger of the right hand is absent. Left oblique inguinal hernia is present. The abdomen is opened by an incision from the sternal notch to the os pubis. Only slight panniculus adiposus. Muscles pale but firm. About 100 c. c. fluid present in the abdominal cavity; the peritoneum, both visceral and parietal, smooth and glistening; no adhesions, Diaphragm: Anteriorly on right side at level of fifth rib, in mid-axillary line and posteriorly at seventh. On left side, anteriorly, it is also at fifth rib, at the seventh in mid-axillary line and posteriorly. Spleen: Weight, 440 grams; capsules strip readily, pulp enlarged and soft. Stomach: Distended with fluid and gas; relations with other organs normal; on section slight atrophic condition of mucous membrane noticed. Intestines: Nothing abnormal noticed. Appendix vermiformis: 15 cm. in length, no adhesions, lumen patulous. Left kidney: Weight, 200 grams; considerable perinephritic fat; the capsule strips readily; the kidney is pale on section and a small cyst filled with turbid fluid found in upper portion; fatty degeneration present; more marked in cortex. Right kidney: Weight, 200 grams; similar to left, only that it is not so pale and the fatty degeneration is less marked. Liver: Weight, 4,200 grams; somewhat enlarged; liver substance firm but friable; some fatty degeneration present. Gall bladder: Normal in form and situation; contains about 25 c. c. fluid bile. Pancreas: Weight, 90 grams: no abnormalities noticed. Bladder: Normal; contains about 120 c. c. urine. Thorax: Right pleural cavity contains about 25 c. c. of clear serum; pleural membrane smooth and shining; no adhesions. Left pleural cavity same as right. Right lung: Weight, 430 grams; has a few old tubercles at base, all apparently healed. Left lung: Weight, 390 grams; no abnormalities. Pericardium: Contains about 15 c. c. of serum; visceral and parietal smooth and shining. Heart: Weight, 300 grams; arrested in diastole. On section slight fatty degeneration of myo-cardium noted. Right ventricle contains some post-mortem clots. Tricuspid valve normal. Pulmonary valve normal. Thickness of ventricular wall 1 cm. Left ventricular wall 2 cm. in thickness. Mitral and aortic valves normal.

J. M. G.
C. P. W.

PARENCHYMATOUS NEPHRITIS AND CIRRHOSIS OF LIVER.

C. G.; 31 years old; born in Germany; admitted to United States Marine Hospital, Baltimore, Md., October 22, 1901; died June 28, 1902.

Patient presented the usual symptoms of chronic parenchymatous nephritis in an advanced stage; large ascites; feet and legs dropsical, and very anæmic. Examination showed liver smaller than normal, decidedly. Has been free drinker of spirits. These symptoms increased and the ascites became so troublesome that it was drawn off a number of times—about once or twice a week from November 16 until January 12, when it was substituted by continuous drainage under water. The largest amount withdrawn in one day was 10,260 c. c. This was kept up for from three to eight days at a time, with intervals of from eight to twelve days, removing the anasarca as well as the ascites, until April 14, when it was discontinued. This was borne without any discomfort except some attacks of cramps in the abdomen, due primarily to the patient admitting air into the peritoneal cavity by lifting the and of the tube out of water to see if it was functioning properly. This occurred several (three) times and the last time the cramps were severe, with temporary (one and one-half hours) collapse, and followed by elevation of temperature, which reached 38.4°, for twenty-four hours. Every insertion of drainage tube was evidently followed by peritoneal adhesions at the site of puncture and around, so that the site of operation had to be changed. This drainage was discontinued because a watery diarrhea, coming on with the last attack of cramps, relieved the dropsy fairly wella nd it was no longer very troublesome. He lived in comparative comfort, save for occasional attacks of vomiting, and died of cardiac syncope at the date stated.

Necropsy (*twelve hours after death*).—Large man, emaciated and anæmic; some anasarca, not much. Linea albicantia well marked; brownish discoloration where drainage tube was inserted. Abdomen: Cutaneous fat absent. Peritoneal adhesions at site of drainage tubes and all over right side. Intestines full of gas; many loose adhesions between them, with some encysted peritoneal fluid clear and serous. Adhesions very slight and tender. Appendix turned back; usual size 5 to 6 cm.; meso-appendix to within 1.5 cm. of end. Considerable serous fluid in peritoneal cavity—clear, save at dependent portions it is somewhat cloudy—3,040 c. c. of it. Thorax: Pericardium: 26 c. c. fluid, clear, with some flakes at bottom. Left lung: Adhesions posteriorly, apparently due to hypostatic congestion. Considerable fluid in left pleural cavity. Lung œdematous; much hypostatic congestion posteriorly. Right lung: Dense pleuritic adhesions throughout. Pleura œdematous. All posterior part of lower lobe in state of hepatization; part of middle lobe the same. Upper lobe shows hypostatic congestion, as does anterior part of lower lobe. No tubercle. Heart: Nearly free from fat; empty; very small, 235 grams. Valves normal; great vessels normal. Dense adhesions, very dense; liver to diaphragm. Gall bladder distended with bile. Liver small, nodular, with dense scars on surface; hob-nailed; weighs 1,275 grams. Tissue dense and hard, yet with areas of fatty degeneration. Kidneys: Right very large; capsule nonadherent; 235 grams; section pale, fatty; cortex more than normal thickness and well marked; distinctly fatty. Left, weight 250 grams; capsule nonadherent; section like right. Spleen large—390 grams—and dense; carnified. Other organs not examined.

NOTE.—The adhesions accidentally produced between the parietal peritoneum and that covering the liver and omentum, and to a less degree the intestines, doubtless acted to relieve the obstruction of the portal circulation due to the cirrhosed liver, and hence the ascites, just as they sometimes do after the Palma operation.

H. R. C.

BRIGHT'S DISEASE.

Bright's disease, granular kidney with cystic degeneration.

C. G.; aged, 50 years; nativity, Denmark; died at sea on January 22, 1902, on board Norwegian bark *Madura*, from Liverpool to Ship Island.

The captain gave the following history:

"*History*.—When he went aboard of bark at Liverpool on December 13, 1901, he was apparently well. On January 13, 1902, his legs began to swell up to his knees; he had no fever. On January 22, 1902, the swelling of legs had disappeared, and patient stated that he felt well, and went to work on deck until 9 p. m. The same night at 10.30 p. m. he went into the forecastle and a sailor saw him swallow some medicine which had a strong odor. A quarter of an hour later he cried out for some water, saying that he was burning inside and that they would have no further trouble with him, and then he died."

Autopsy (*eighty-two hours after death*).—Body that of an adult male, apparently about 45 years old. No rigor mortis. No evidence of external violence. The dependent portion of the body was ecchymotic. The abdomen greatly distended. Hydrocele in left side of scrotum. Body was opened with a long incision from symphysis of chin to symphysis of pubes. Dark grumous blood in tissues of neck. A transverse incision was made above umbilicus, about 4 inches long. Sternum was removed. Some of the intercostal cartilages are calcified. About 100 c. c. of light-colored fluid in pericardium. Mucous membrane of mouth, on right side, blanched, on left side discolored. Some adhesions are found at apex of right lung, which bound it down posteriorly. When abdomen was opened great congestion of viscera was found. Liver in normal position, but very dark; the tissue is darker than the surface; weighs 2,060 grams. Glisson's capsule strips off easily. Gall bladder contains much bile, and is very much discolored and distended. The ductus communis choledochus is patent. Gall bladder contains about 50 small gall stones, about the size of No. 6 bird shot. Spleen weighs 200 grams, is friable, and of mottled appearance; the substance is very dark, and the capsule strips off with difficulty. Larynx presents a pale mucous membrane; the mucous membrane of trachea is congested. Heart weighs 530 grams; the surface of the right auricle and ventricle covered with fat and dilated. Aortic valve normal. Left auricle apparently normal.

Auriculo-ventricular opening on left side will admit four fingers. Coronary arteries normal. No deposits in mitral valve. The columnæ carneæ hypertrophied. Wall of left ventricle hypertrophied. Lungs of mottled appearance, float in water, very much congested, and a white frothy fluid exudes on incision. Right lung weighs 560 grams; left lung weighs 780 grams. Right kidney weighs 780 grams; is as large as a small cocoanut; is lobulated. There is an enormous cyst at hilus of kidney, containing 250 c. c. of a straw-colored fluid. Almost the whole of kidney has been absorbed, except a minute quantity of kidney substance in cortical portion. Right kidney without fluid weighs 150 grams. This consisted chiefly of the hypertrophied sack. Left kidney weighs 250 grams and is enlarged. The capsule peels away with difficulty, bringing kidney substance with it. The surface is granular and of a cherry red. The pyramids are very distinct and encroach on the cortical area, which is very thin. The connective tissue was greatly hypertrophied and had almost destroyed the glandular elements of the kidney. Intestines filled with gas and very much congested. Urinary bladder full of urine. The left tunica vaginalis contains about 350 c. c. of straw-colored fluid. Stomach mucous membrane is very much discolored but otherwise normal. All organs had undergone certain post-mortem change.

J. T. B.

Bright's disease, granular kidney.

G. M.; age, 45 years; nativity, Germany; admitted to the United States Marine Hospital, San Francisco, Cal., May 26, 1901; died November 18, 1901.

History.—The patient stated he had had gonorrhea and syphilis. His present illness began about three weeks ago with dyspnœa and palpitation of the heart upon exertion. He had vomited blood upon several occasions. His face is cyanotic and his arteries sclerotic. Pulse rapid. There is a loud systolic murmur heard over the whole cardiac region. The heart is not enlarged, but the liver is enlarged and slightly tender. The urine contains 1.5 per cent of albumen. The specific gravity is 1,010, reaction neutral and color pale yellow; 3,500 c. c. of urine are passed in twenty-four hours. The patient recovered from this attack and remained in fairly good health until November 1, when he complained of severe headache and a return of his dyspnœa. His face was suffused and he vomited his food. On November 12 he passed blood in his stool, and on the 14th there was blood in his vomit. On the 16th he became drowsy and soon afterwards unconscious. He had several convulsions and finally died from exhaustion at 4 a. m. November 18, 1901.

Necropsy (six hours after death).—Body well nourished; rigor mortis well marked; height, 165 cm.; weight, 150 pounds. The abdominal wall is 2 cm. thick. The intestines are of a grayish color. The mesenteric fat is thick. Appendix normal. The right lobe of the liver is bound down to the abdominal wall by a few old adhesions. There is no fluid in the abdominal cavity. Brain: Weight, 1,337 grams. There are a number of thick white spots on the membranes covering the front of the brain. The brain tissue is slightly œdematous and a small amount of clear fluid is found in the ventricles. Heart: Weight, 555 grams. In the right auricle several fine fibrin-like threads extend from the auricular wall above the tricuspid valve to the auricular appendage. The wall of the right ventricle is 7.5 mm. thick. The tricuspid valve is thin and shrunken. The pulmonary valves are normal except there is some thickening at the base. The wall of the left ventricle is 2.5 cm. thick. An ante-mortem clot extends from the left auricle into the ventricle and is tightly adherent to the mitral valve. The ring of the mitral valve is sclerotic and the valve is thickened and nodular. A nodule as large as a pea is present at the base of the small leaflet. There are a number of white patches in the endocardium below the aortic valve. The aortic valve is apparently normal. The heart muscle shows fatty infiltration and degeneration. Right lung: Weight, 840 grams. It is crepitant throughout and floats in water. The color is a mottled gray; froth exudes on pressure. Left lung: Weight, 555 grams. The condition of its tissue is similar to the other lung. Spleen: Weight, 207 grams. The color is dark brown with the exception of a few white patches the size of a pea. The capsule is adherent, the interstitial tissue is well marked, and the pulp is soft. Left kidney: Weight, 85 grams. There is much fat in the pelvis, the cortex is small, color red mottled with yellow. Right kidney: Weight, 85 grams. The condition of its tissue is similar to the other kidney. The stomach is 24 cm. long, and its greatest diameter is 10 cm. The mucous lining is congested throughout and there are a number of small hemorrhages at the cardiac end. Liver: Weight, 1,615 grams. The capsule is adherent throughout; on section the tissue is greasy to the touch, of a dark-red color and firm consistency. Bile exudes from the biliary ducts.

Asst. Surg. G. W. McCoy reports as follows upon the microscopical condition of the heart and kidneys: "Heart: Papillary muscle in left ventricle; examination of sections stained with hæmatoxylin. There is considerable thickening of endocardium and basement membrane. The walls of the small blood channels in the muscle are much thickened and are patulous. Bands of fibrous tissue are found, extending in various directions, between the muscular fibers; there is a decided increase in the amount of interstitial connective tissue. The protoplasm of the majority of the muscle fibers stain rather feebly. In the center of many of the muscle fibers are to be seen many fine fat granules. This change is most noticeable just beneath the endocardium. In some cases the change has progressed so far that the whole of a fiber is converted into a mass of fat granules. So well marked is the change that almost the whole periphery of the muscle is made up of fibers showing more or less fatty change. Sections taken from the wall of the left ventricle show a great many of the muscular fibers to be in a state of fatty degeneration. The process here seems to be rather less advanced than in the papillary muscle. In the case of some cells there is simply an aggregation of fat granules, extending from the poles of the deeply staining nucleus, a varying distance toward the end of the cell and always in a line with the nucleus. Cells showing this change are found much more frequently just beneath the endocardium than in any other part of the section. Very rarely a cell is seen that has been converted into a mass of fat granules of varying size. In cross section of the fibers showing fatty change the process is always noted to be confined to the central part of the fiber. Kidney: The capsule is very thick, probably five or six times as thick as normal. It is made up of a dense fibrous tissue. Large septa of fibrous tissue extend from capsule into cortex to varying depth. The glomeruli are surrounded by a capsule of fibrous tissue quite distinct in every case, and sometimes the glomerulus is almost obliterated by this connective tissue growth. Between the tubules of the cortex there is everywhere a great increase in the interstitial tissue. In a few instances the epithelial cells of the tubules show fatty granules. In the medulla the same fibrous change exists, but to a less extent than is true of the cortex. Even in the cortex an area is occasionally to be found in which the amount of interstitial tissue is but slightly above normal. Blood vessels, particularly the arteries of the cortex, are seen to have remarkably thick walls, the thickening in most part being due to an excess of fibrous tissue; but even the muscular layers are very much thickened. A few tubules are very much dilated, probably representing the walls of small cysts. In some cases the tubules have lost entirely their epithelial lining, being represented simply by spaces in the connective tissue mass. The appearance in the two kidneys did not differ any respect."

G. W. M.
W. G. S.

Bright's disease, chronic parenchymatous.

J. J.; white; age, 40 years; nativity, Norway; admitted to the United States Marine Hospital, New Orleans, La., November 27, 1901; died December 9, 1901.

The patient was admitted suffering from gastric disturbance, progressive weakness, shortness of breath, and œdema of the legs and feet.

Physical examination showed a condition of excessive anæmia to be present. On percussion slight dullness could be made out over both apices. The heart seemed to be slightly hypertrophied and the heart sounds were very loud. The second sound was accented and a high arterial pressure was noticed. The spleen was markedly enlarged. Examination of the blood showed nothing beyond a condition of anæmia. Examination of the urine showed about one-fourth of 1 per cent of albumen present and, microscopically, both normal and abnormal blood cells; granular, fatty, and epithelial casts, and degenerated renal epithelium of the round variety. The amount of urine passed averaged about 850 c. c. per diem.

The patient was placed on appropriate treatment and seemed to improve for a while. The urine rose in amount to 1,200 c. c. daily and contained fewer microscopical elements. The improvement, however, was only temporary and the urine again diminished in amount and the œdema of the feet increased until December 9, 1901. The patient became moribund quite suddenly and expired in about ten minutes.

Necropsy (*twenty hours after death*).—Body of a fairly well-nourished and well-developed man; height, 170 cm.; weight, 65 kilograms. Rigor mortis present; considerable œdema of lower extremities, extending halfway to the knee. Body opened by incision from the sternal notch to the os pubis. About 3,000 c. c. of clear serum are present in the abdominal cavity. The peritoneum, both visceral and parietal, was smooth and free from adhesions. Stomach: Relatively very small, and on section was found to contain a little fluid. Some dilatation of the gastric arterioles noted. Spleen: Weight, 1,320 grams; much enlarged; capsule strips readily; splenic pulp dark and grumous. Right kidney: Weight, 210 grams; capsule adherent over upper three-fourths of the viscus. A cyst containing about 30 c. c. of clear fluid occupies the superior extremity. The whole of the kidney beneath the adherent capsule is nodular. On section the kidney presents a great overgrowth of connective tissue, which in places has almost obliterated all traces of the normal kidney parenchyma. Left kidney: Weight, 190 grams. Condition same as right, with the exception that it contains no cyst. Bladder: Firmly contracted. Contains no urine on section. Liver: Weight, 2,300 grams. Some slight hypertrophy of connective tissues noticed. Small intestine: Contains a moderate amount of greenish-colored fluid. On section no abnormalities are noticed. Vermiform appendix: Length, 10 cm.; its lumen patulous; no adhesions. Thorax—Right pleural cavity: A few old adhesions at apex; contains 15 c. c. fluid. Left pleural cavity: A few old adhesions at apex; about 20 c. c. of serum present. Right lung: Weight, 400 grams. Apex presents scar of old tubercle, otherwise normal. Left lung: Weight, 380 grams. Old healed tubercle at apex, otherwise normal. Pericardium: Visceral and parietal surfaces smooth; 25 c. c. fluid present. Heart: Weight, 320 grams. Arrested in systole. Presents no abnormalities beyond hypertrophy of the left ventricular wall, which measures about 2 cm. in thickness.

Cause of death: Anæmia, due to great parenchymatous degeneration and interstitial fibrosis of the kidneys.

J. N. S.
C. P. W.

Bright's disease, chronic parenchymatous.

A. H.; age, 52 years; nativity, Louisiana; admitted to the United States Marine Hospital, New Orleans, La., November 6, 1901; died November 7, 1901.

This case was brought by ambulance from 52 Gasket street in a comatose condition. No history could be obtained from inmates of the house, except that the patient had been found in that condition in bed. On admission the pulse was 134 and temperature 38.3° C.; the heart sounds were clear and distinct, but embryonic in character. Percussion gave slight dullness over the bases of both lungs, and auscultation some bubbling râles; the breathing was of the Cheyne-Stokes variety. The pupils were about normal in size, but did not react to light, and there was slight nystagmus. A faint urinous odor was noted about the patient's body. The urine, withdrawn by catheter, amounted to 200 c. c. It was turbid, and upon filtration was found to contain one-fourth of 1 per cent albumen. Examination of the blood was negative.

The patient was freely stimulated and subcutaneous infusions of normal salt solution were given, but he failed to rally, and remained in the same condition until his death, which took place the following morning at 7 a. m.

Necropsy (*five hours after death*).—The body of a well-nourished and well-developed man about 168 cm. in height and 70 kilograms in weight. Rigor mortis not present. The body was opened by the usual incision. Panniculus adiposus well marked; the muscles dark and firm. The visceral and parietal peritoneum is smooth and glistening; no adhesions; about 250 c. c. fluid present. Diaphragm: Anteriorly on the right side it is between the fifth and sixth costal interspace and in the mid-axillary line, posteriorly between the seventh and eighth. On the left side it rises to the fifth rib in front; in the mid-axillary line and posteriorly, to the seventh. Intestinal canal: The small intestine is collapsed; on palpation, two nodules can be made out, situated about 18 and 30 cm., respectively, from the ileo-cecal valve. On section, however, nothing abnormal except a slight hypertrophy of the muscular coats could be found in these situations. Large intestine is much distended with gas. On section no abnormalities noticed. Vermiform appendix: Only about 4 cm. in length and atrophic. Spleen: Weight, 70 grams; no abnormalities. Right kidney: Weight, 140 grams; capsule strips readily, except over superior extremity, where it is slightly adherent. There is slight fatty degeneration present. Left kidney: Weight, 210 grams; similar to right. Liver: Weight, 1,370 grams; no abnormalities. Bladder: On section contains 100 c. c. turbid urine; the muscular walls are slightly hypertrophied. Prostate glands: Weight, 80 grams, and the middle lobe is considerably enlarged; is firm on section and presents structurally an overgrowth of connective tissue. Thorax: Right pleural cavity contains 20 c. c. fluid; parietal and visceral surfaces smooth, except for a few slight adhesions at region of right apex. Left pleural cavity contains 20 c. c. fluid; no adhesions. Right lung: Weight, 490 grams; old healed tubercle at apex; some passive congestion of base; a few emphysematous vesicles along anterior border. Left lung: Weight, 440 grams; other conditions same as right. Pericardium: Contains 15 c. c. serum, otherwise normal. Heart: Weight, 300 grams; no abnormalities noticed with the exception of some slight sclerosis of one of the aortic valvular segments.

The calvarium was now removed. The dura mater was found adherent to the cranial vault, but was quite easily detached. Nothing abnormal was noticed in connection with any of the sinuses. The pia mater was smooth and glistening. On removing the brain the condition of the cranial nerves was carefully observed, without, however, revealing any abnormalities. Careful sections through the brain parenchyma showed nothing abnormal. The cerebellum was normal.

Cause of death: No direct cause could be determined from this post-mortem examination.

J. N. S.
C. P. W.

DISSEMINATED SCLEROSIS—INTERSTITIAL NEPHRITIS—HYPERTROPHY OF HEART.

W. M.; age, 78; nativity, England; admitted to the United States Marine Hospital, Chicago, Ill., November 8, 1890; died January 26, 1902.

History.—Patient admitted venereal ulcer during youth. No other sickness until fifty-fourth year, since which time he has had pneumonia, rheumatic fever, and malaria.

In 1887 he fell into a vessel's hold, striking his head and right side. He entered hospital eight months later because of weakness and numbness of legs, pain in head and back, and loss of memory. He again entered hospital in 1890 with these symtoms increased. When readmitted in 1890 he also had attacks of vertigo. Examination showed partial anæsthesia of both feet, analgesia of both feet and left leg; patella reflexes—left decreased, right exaggerated; intention tremor existed in both arms and legs. In October, 1900, after slight exertion he became unconscious, then slightly delirious, but rallied in a few weeks; superficial reflexes lost; right patella reflex remained, and pupils still responded to light, nystagmus slight; speech became slow and scanning. In walking he dragged his feet across the floor. The iodides and bromides were given, and later strychnine. During January the patient failed gradually and died from asthenia.

Necropsy (*thirteen hours after death*).—Body well nourished; post-mortem lividity on dependent parts; rigor mortis marked; right lung bound to parietal pleura at apex and on posterior surface by dense adhesions; left lung displaced upward by heart and firmly attached to parietal pleura, and below to pericardium. On incision lungs were found congested, but showed no macroscopical lesion. Weight: right lung, 700 grams; left, 505 grams. Pericardial cavity contained normal amount of fluid. Heart: Hypertrophied; weight, 740 grams; coronary arteries and veins congested; right side filled with fluid blood; left ventricle contained small red clot; pulmonary and tricuspid valves normal; aortic and mitral incompetent; no apparent degeneration of the aorta. Abdomen: Peritoneum and omentum normal. Spleen: Weight, 265 grams; hard, capsule adherent, pulp congested. Kidneys: They presented the same appearance, both small; right weighed 100 grams, left weighed 125 grams; capsules not adherent; several small retention cysts on surface of each; cortices very thin and pyramids indistinct. Ureters, bladder, urethra, and generative organs normal. Stomach distended; contained 500 c. c. of brownish fluid. Liver contracted, weight, 1,320 grams; pale and resistant to knife; gall bladder half distended with bile; contained four small stones; gall duct patulous; pancreas small and fibrous. Other organs show a similar increase of connective tissue. Brain: Weight, 1,210 grams; on sawing through calvarium blood flowed freely from diploe; dura mater not attached to vortex, but thickened and opaque throughout; subdural space contained serous exudation in excess and arachnoid covered by fibrinous exudate; superficial veins congested; gray matter of cortex diminished in thickness. Incision into lateral ventricles showed excess of fluid, also cystic degeneration of choroid plexus. Small degenerative area found in left internal capsule. The blood vessels throughout brain showed thickening of their walls and remained patulous after division. There was an increase in the proportion of white over gray matter, especially noted in the cerebellum. Entire spinal cord removed; dura was thickened, and an excess of fluid was found in subdural space.

L. D. F.
W. C. B.
H. W. S.

CHRONIC INTERSTITIAL NEPHRITIS.

C. H. A.; age, 68; nativity, Vermont; admitted to the United States Marine Hospital, Mobile, Ala., August 20, 1900; died October 25, 1901.

Family history.—Mother died with dropsy; five brothers killed in battle. Previous personal history: Had usual diseases of childhood except scarlet fever; suffered from an attack of typhoid fever when 11 years old; in 1856 had yellow fever; he says that he had it again at Santiago (no date given); in August, 1862, fell from aloft on man-of-war and sustained a severe injury to lumbar region of back; was rendered helpless and received treatment for about a year in naval hospital before he was again able to go to sea; the right femur was dislocated and his kidneys also gave him some trouble; patient at present complains of weakness in legs, especially upon walking, and is easily fatigued; power of coordination impaired, as he can not touch the ends of forefingers of hands when tested in the usual way; there is a slight defect in speech, and oscillation of the eyeballs are well marked; intentional tremors a prominent symptom, especially when excited, he can with difficulty raise a glass of water to mouth; when calm and reposed the tremors are absent. The case was first diagnosed as one of disseminated sclerosis, but in a couple of weeks the patient began to pass blood in his urine and complained of pain in left side and over pubis; he was then treated for acute cystitis. He says that he was operated upon several years ago and his left kidney removed, but the nurse in hospital, who was present at operation, says that his kidney was only examined and the incision closed. Patient would suffer at times with pain in left side and pass bloody urine, with intermissions of days or even weeks with but little or no pain or blood in urine; the symptoms at times resembled those of stone in kidney; patients arteries were hard; radial and ulnar felt like pipestems. Patient had small sore on lip when admitted, and this continued to spread and soon assumed the character and signs of an epithelioma growth on under lip. Operation consisted of entire excision of growth, and the patient recovered without any recurrence.

August 23, 1901.—Patient in a semicomatose condition. Pulse weak and ranging in 40.

August 31.—Vomited several times during night; bowels constipated. After this time patient was usually aroused with difficulty, barring a few lucid moments at various intervals.

Necropsy (twelve hours after death).—Body that of a white male; apparent age about 70 years. Upon anterior aspect of right leg there is an india-ink mark of a tail of a fish; body emaciated; rigor mortis moderate; eyes opened; left pupil more dilated than right, which is about normal. Body opened by long incision from symphysis of chin to symphysis pubis; muscular tissue rather dry and red; cartilages of ribs ossified; pericardial sac opened, contains about 30 c. c. of fluid; heart removed; weight, 450 grams; organ dilated, substance soft and easily torn; all valves of heart were inelastic and contained calcareous deposits; aortic valves incompetent; mitral valves incompetent. Pharynx and larynx apparently normal; pleuritic adhesions on both sides, especially extensive and firm on right side, rendering removal of lung an impossibility without tearing the substance to pieces; left lung weighs 740 grams; both œdematous and posterior lobes seat of hypostatic congestion. Liver weighs 1,450 grams; normal in appearance, rather firm. Stomach somewhat dilated, and mucous membrane of a pale-gray color, covered with thick, tenacious mucous; there are ecchymotic patches, also some hemorrhagic spots on stomach. Gall bladder distended with black, thick bile of tarry consistence. Intestines somewhat congested and mostly empty. Spleen rather large and firm; weighs 210 grams. Right kidney weighs 170 grams. Both kidneys almost converted into cysts; very little serviceable kidney left; four large cysts in right kidney from size of a hen's egg to a hazelnut; one contains a dark, black fluid; left kidney full of small cysts and one about size of guinea egg. Line of demarcation between cortical and medullary areas fairly well marked, cortical substance thin and firm, capsule peels away with difficulty, bringing kidney substance; the ureters were potent and apparently normal, the bladder very much thickened; the urethra contained no stricture. Ulnar and radial arteries extensively degenerated, hard, sclerosed, and noncollapsible.

Clinical diagnosis.—Degeneration of arteries, arterio-capillary fibrosis, chronic interstitial nephritis.

Pathological diagnosis.—Cyst of kidneys.

W. P. M.

BRIGHT'S DISEASE—GRANULAR KIDNEY.

Hemorrhage into the corpus striatum; hemorrhage of the pancreas.

F. L.; age, 47 years; nativity, Maine; admitted to the United States Marine Hospital, San Francisco, Cal., February 12, 1902; died February 21, 1902.

History.—The patient has had gonorrhea several times, but there is no history of syphilis. He has always been a hard drinker. He was in this hospital from October 17, 1901, to December 19, 1901, suffering from ulcers on the back of the right leg, due to varicose veins. He was discharged recovered, but the ulcers returned soon after he left the hospital. Lately he has had constant pain in upper part of his abdomen and also attacks of vomiting. He has also had headache, vertigo, and impaired memory. His feet have been swollen and his bladder has been irritable, requiring him to urinate every hour or two.

The physical examination shows that the lungs are normal, but that the area of heart dullness is much increased. A soft systolic murmur is heard over the mitral area and is transmitted toward the axilla. The pulse is 68 to the minute, regular, small in volume, low in tension. The liver is enlarged, and there is tenderness on pressure over the epigastric region. The patient has a left inguinal complete hernia, easily reduced. There is some puffiness under the eyes. The urine has an acid reaction, specific gravity 1.025, and the picric-acid test shows the presence of albumen. The temperature is normal.

At 8 p. m. of February 12 the patient suddenly became very restless and his speech was thick. It was noticed that his left arm and leg were paralyzed. The tongue deviated toward the left; the left pupil was larger than the right. The next morning his condition had not improved and he had no control over the passage of his urine or the movement of his bowels. His breathing was at times stertorous. On February 17 the patient passed blood from his bowels, and this hemorrhage continued to recur several times a day until his death. His abdomen was not swollen or tympanitic, nor did he have any fever. His mind became clearer and he was apparently improved when, at 3 p. m. of February 21, he became unconscious, with labored breathing and twitching of the muscles of the right arm and leg. He gradually failed, and died at 6 p. m. of the same day.

Necropsy (*fourteen hours after death*).—Height, 170 cm.; small ulcers on outside of right leg and inside of left leg. The abdominal wall is 1 cm. thick; the intestines are of a grayish color and slightly distended with gas; there is a large blood clot in the peritoneal cavity on the right side, extending from the lower surface of the liver and diaphragm to the crest of the ilium; this clot also extends behind the peritoneum and is thickest and most dense around the head of the pancreas. Brain: Weight, 1,470 grams; measurements, 20 by 13 by 8 cm.; all the arteries are much thickened and indurated, crumbling to pieces when handled. A longitudinal section through the right hemisphere of the brain shows a blood clot the size of a small hen's egg in the cerebral substance at the junction of the middle and posterior cornua of the lateral ventricle. There is also a clot the size of a pea in the anterior portion of the lenticular nucleus of the left side.

The outer wall of the pericardium and the upper surface of the diaphragm are infiltrated with blood. The pericardium contains 50 c. c. of yellowish fluid. Heart: Weight, 693 grams; measurements, 11 by 11 by 9 cm.; the wall of the right ventricle is 1 cm. thick; the wall of the left ventricle 3 cm. thick. Yellow clots extend from the heart into both the pulmonary artery and the aorta. The edges of the mitral valve are slightly roughened. Right lung: Weight, 685 grams; measurements, 23 by 18 by 8 cm.; color, reddish gray; tissue, crepitant; base, slightly congested. Left lung: Weight, 427 grams; measurements, 24 by 14 by 5 cm.; tne condition of the tissue is the same as the opposite lung. Spleen: Weight, 195 grams; measurements, 13 by 8 by 3 cm.; color, reddish brown; tissue, normal. Left kidney: Weight, 135 grams; measurements, 10 by 5 by 3 cm.; cortical portion, one-half to 1 cm. thick; color, pale red, mottled with yellow; pyramids prominent. Right kidney: Weight, 135 grams; measurements, 11 by 6 by 3 cm.; the condition of the tissue is the same as the other kidney. Stomach normal. The duodenum, head of pancreas, upper part of small intestine, and ascending colon are surrounded by the blood clot previously mentioned, and the tissues of the structures, especially the ascending colon and the pancreas, are densely infiltrated with blood. Appendix normal. Liver: Weight, 1,910 grams; measurements, 26 by 19 by 9 cm. The tissue is hard, greasy to the touch, and of a pale-red color.

W. G. S.

CHRONIC INTERSTITIAL INFLAMMATION OF LUNGS.

T. F.; age, 59 years; nativity, Ireland; admitted to the United States Marine Hospital at Cleveland, Ohio, December 1, 1901; died February 5, 1902.

History.—Has been treated at this hospital and at Buffalo, N. Y., for several years on account of chronic bronchitis, which has always been more severe during the winter season. He is emaciated and very weak. Appetite is poor and has difficulty in retaining food, owing to irritability of the stomach from excessive cough. Tongue is coated with a thick fur and at times has a thin, watery diarrhea. Breathing is rather rapid and costal in character rather than abdominal; is unable to lie down in bed on account of dyspnœa. On percussion there is increased resonance over both lungs. On auscultation the breathing is harsh over both upper lobes. Many moist râles are heard over the entire thorax anteriorly and posteriorly. He raises a large amount of muco-purulent sputum, which on examination was found to contain large numbers of streptococci and staphylococci. Tubercle bacilli were absent. Temperature range was irregular and at times reached 39° C. in the evening.

December 6, 1901.—A few friction sounds heard over lower lobe of left lung, with severe pain with respiration. A few days later a small amount of effusion was found over lower part of left lung anteriorly. Apex of heart displaced slightly to the left in left nipple line. Pulse weak but regular. Heart sounds are normal. Examination of urine negative. Patient grew steadily weaker, so that he was unable to raise sputum, and died February 5, 1902.

Necropsy (*twenty-one hours after death*).—Rigor mortis present; hypostasis over dependent parts of body and extremities. Superficial appearance of chest shows marked emaciation, intercostal spaces sunken, and abdomen retracted. Skin dry and wrinkled, muscles small, and subcutaneous fat small in amount. Heart was found to be negative. The costal cartilages on either side of the sternum were ossified. Both lungs were firmly adherent to the parietal pleura. Adhesions were so firm that they could not be torn. Right lung larger than normal and extended over median line. Lung did not crepitate and was very firm. On section lung was tough and very hard to cut; purulent fluid exuded from bronchi, many of which were dilated. That part of lung near the root was firmer and more resistant to cutting than the periphery. Anthracosis was very marked. Left lung was not enlarged, and in other respects similar to right. Peritoneum contained large amount of fat. Stomach was greatly dilated, about three times normal size, and extended down to umbilicus; contained large amount of greenish-yellow fluid, with particles of undigested food. Stomach walls very thin. Intestines were very small and empty. Appendix was adherent to posterior wall of pelvis, about 10 cm. in length; lumen was open. Liver was large, of dark-red color. Gall bladder distended; gall ducts normal. Pancreas showed post-mortem degeneration. Spleen was enlarged. Capsules of both kidneys adherent; otherwise normal.

Microscopical examination.—Right lung, section from near the root: Anthracosis very marked. Walls of the alveoli about four times as thick as normal. The majority of the alveoli are completely collapsed; others are filled with blood and fibrin. Walls of blood vessels are thickened and contain clots. Epithelium of bronchi nearly gone; contain a large amount of pus. The majority of the bronchi are partially collapsed. Section near the cortex shows marked anthracosis. Alveoli are very much dilated; walls thin, and in some places entirely gone. One part of the section shows light-brown pigment in the walls (brown induration). Bronchi same as above section. Kidney: Cortex contracted; small areas of hemorrhage. Blood vessels are dilated. Bloody casts in tubules; some cloudy swelling in the cortex. The spleen shows intense congestion. Appendix: Mucosa is normal. There is a small abscess about midway between the apex and the opening which has broken through the mucosa and invades about half the muscular coat.

W. J. P.
A. D. F.
R. F. K.

IDIOPATHIC ANÆMIA.

J. O. E.; age, 52 years; nativity, Sweden; admitted to the United States Marine Hospital, San Francisco, Cal., October 3, 1901; died December 5, 1901.

History.—The patient said that he had been sick for three weeks, suffering from slight chills, fever, and dyspnœa. He had no appetite and was very weak. His hands and feet were swollen. The specific gravity of the urine was 1.021, reaction acid. Bile was present in the urine, but neither albumen nor sugar was found in it. The blood examination showed a great diminution in the number of red-blood corpuscles and a slight increase of the white-blood corpuscles. The extreme anæmia was demonstrated by the pallor of the drop of blood, the presence of poikilocytes, megalocytes, microcytes, shadow cells, normoblasts, and megaloblasts. The blood contained only 14 per cent of hemoglobin. The man was fairly well nourished, and his skin had a lemon-color tint. His lungs were normal, but there was a loud systolic murmur heard over the apex of the heart. The area of cardiac dullness was not increased. The liver and spleen were not enlarged. There was tenderness upon pressure over the pyloric end of the stomach. On some days the patient's jaundice was well marked, and on other days he had an ashy gray pallor. The jaundice was most noticeable upon the face. He complained constantly of dyspnœa and of pains all over his body. He had no appetite, and on November 3 he had an attack of vomiting. These attacks became more frequent as his weakness increased. His body at no time appeared emaciated, and even during the last two weeks, when he was confined to his bed, he did not lose flesh. A few days before death he complained of occasional attacks of severe pains in his epigastrium. He finally sank into an unconscious condition, and died at 4 a. m., December 5, 1901.

Necropsy (*six hours after death*).—Height, 165 cm.; skin and muscles are stained a yellow color. There is a scar 14 cm. long in each groin, and one 10 cm. long on the left tibia. The abdominal wall is 1½ cm. thick. The peritoneal cavity contains a small quantity of yellowish fluid. The omentum and the cæcum is adherent to the abdominal wall in the right inguinal region. On tearing through these adhesions the appendix is found to be very much atrophied; in fact, a mere nodule the size of a pea on the inner and back portion of the cæcum. Brain: Weight, 1,380 grams; measurements, 16 by 14 by 7 cm.; tissue, normal. There is a quantity of fat in the mediastinal space. The pericardial sac contains 100 c. c. of fluid; the sac is of a yellow color and much thickened. Heart: Weight, 420 grams; measurements, 10 by 11 by 8 cm.; the right ventricle is 0.7 cm. thick, half of which is composed of fatty tissue; all the valves are shrunken; their edges are thickened and infiltrated with fat; the wall of the left ventricle is 2 cm. thick; the endocardium is of a brown color mottled with yellow. There are sclerotic spots on the aorta. The apices of both lungs are adherent. Left lung: Weight, 420 grams; measurements, 21 by 20 cm.; gray color; externally crepitant. Very little blood or serum exudes on section. Right lung: Weight, 380 grams; measurements, 17 by 16 cm.; the condition of the tissue is similar to that of the left lung. Spleen: Weight, 220 grams; measurements, 12 by 8 by 4½ cm.; tissue moderately firm; color on section, reddish brown. Left kidney: Weight, 190 grams; measurements, 11 by 5½ by 3 cm.; the pelvis is filled with fat; the cortical substance is 0.7 cm. thick; color, yellowish brown. Right kidney: Weight, 165 grams; measurements, 9½ by 6 by 3 cm.; color of the tissue, the same as the other kidney, only not so yellow. The tissue of the suprarenal glands is of a yellowish-brown color. Stomach: Measurements, 26 by 13 cm.; the mucous membrane is of a pale-yellow color mottled with brown; the pyloric end of the stomach is patulous; the pylorus is slightly thickened, and there is a small gumma the size of a pea in the lower wall. The mucous membrane of the intestines is of a pale-yellow color. Liver: Weight, 1,430 grams; measurements, 21 by 16 by 6 cm.; the tissue is greasy to the touch, hard and dense; color, brown. The cystic duct is obliterated; the gall bladder contains a small quantity of inspissated bile.

The microscopical examination shows the following: Heart: A section taken from the wall of the left ventricle showed well-marked fatty degeneration. The change is found in considerably more than half of the muscle fibers. In some cases there are only a very few fat granules at each pole of the nucleus; a great many more show a great many granules in the center, extending from the nucleus to near the end of the fiber. In a few cases the whole fiber is converted into a mass of fatty granules. There is no increase in connective tissue. Kidney: There is a cloudy swelling of the epithelial cells of the tubules, and a few of the cells show the presence of fat granules. In a few places in the section there is an increase in the amount of connective tissue, but this change is not at all prominent. Liver: This organ is in a well-marked and rather far-advanced state of fatty degeneration. Some epithelial cells consist only of a nucleus and a mass of fatty granules. There is no increase in the amount of connective tissue or in the number of bile ducts. No pigment granules are seen. Spleen: The tissue of this organ was entirely normal. Pancreas: Small increase of connective tissue is the only abnormality. Suprarenal capsule: Sections were not very satisfactory, but no abnormal condition was found. Pylorus: The stomach epithelium and glands are normal. Between the mucous and muscular layers are to be found occasionally small areas of round cell infiltration. The muscle fibers are very pale, and some seem to be in a state of beginning fatty degeneration. Bone marrow: The specimens were from the middle of the shaft of the radius. Sections showed an absence of fat in the marrow. In the connective tissue network were many cells of the different kinds described below. The smears were treated in the same manner as ordinary blood smears. They showed white cells, a few neutrophilic polymorpho nuclear cells; a considerable number of myelocytes, mostly neutrophilic, but a few with eosinophilic granulations; very rarely a cell that had the appearance of a small lymphocite. Red cells: A few ordinary red cells, a few poikilocytes and shadow cells, many megalocytes. A great many nucleated red cells were found; a very few of them were microblasts, a large number were normoblasts, but by far the larger number megaloblasts, frequently having more than one nucleus. Certain elements, about as large as a normal red cell, with a faintly granular appearance throughout, stain a dark bluish green with triacid stain. These bodies are quite numerous.

J. F. M.
G. W. M.
W. G. S.

RHEUMATIC FEVER.

P. C.; age, 42 years; nativity, Maryland; height, 6 feet; weight, 190 pounds; admitted to the United States Marine Hospital, port of New York, N. Y., July 19, 1901.

At the time of his admission he was suffering with rheumatic fever; the disease was located in the right wrist joint, which was highly inflamed and swollen. An aortic regurgitant murmur was present, believed to be of old standing. The rheumatic condition progressed favorably until July 26, when his fever became continuous, ranging from 38° to 40° C. The bowels became very loose, tongue furred, and vomiting incessant. There was no appetite. The pulse was the typical Corrigan "water-hammer," and the aortic brüit was very loud. On August 3 the temperature dropped to normal, followed by excessive sweating, only to rapidly rise to 39° C. This condition became markedly asthenic; typhoid systems rapidly supervened; the murmur was loud, and the first and second aortic sounds disappeared, and the other valve sounds became very weak. On August 15 temperature again normal, only to rise on the 16th to 39. The variations in temperature continued all through the illness, sweating profuse, anorexia, weakness pronounced and rapidly increasing. Chills now became frequent, delirium and dyspnœa, vomiting of yellowish, bitter material resembling bile. On August 22 mental hebetude became marked, skin bathed in profuse sweat. Heart sounds feeble, dyspnœa became more marked, and patient died at 1 p. m., August 22, 1901.

Necropsy (*twenty-three hours after death*).—Rigor mortis complete. Muscular development good. Body well nourished; subcutaneous fat abundant. Eyes closed; pupils moderately dilated; face emaciated. Post-mortem lividity marked. On removing the sternum the right lung was seen to entirely fill this side of the chest cavity. The lung is intimately adherent to the chest wall at all points except the apex. Adhesions are most pronounced posteriorly and at the base. On removing the lung it was found to be large, firm to the touch at its apex and middle lobe, and was quite heavy. Section of the apex shows a marked congestion, especially of posterior portion. The lung substance was dark in color and exuded a frothy mucus. Faint crepitation at apex. The base and lower portion were congested, but to a much less degree; weight, 1,084 grams. Left lung was seen to lie against the posterior portion of the chest wall. Adhesions were not so extensive as in the right lung and congestion not so pronounced. The lung, however, presented the same picture as the other, but to a much less degree; weight, 837 grams.

The bronchii contained a frothy, blood-colored mucus. The pericardial sac was seen to be distended and bulged anteriorly. On opening it, it was found to contain a large quantity of pale, straw-colored fluid. No adhesions to the heart were found, and the membranes were smooth and glistening. No hemorrhagic areas were seen. Examination of the heart in situ showed it to be very large, forming the "cor bovosum." It seemed to have ceased action in systole. Opening the right side shows it to be filled, partly with ante-mortem clot, to have stopped in systole, and to contain dark, liquid blood. The right side was not opened in situ. The heart was then removed and further examined. Pulmonary and tricuspid valves were found to be normal and competent. The heart muscles of this side presented no structural (gross) changes, only seeming smaller, perhaps, by comparison. The chordal tendinæ were attached at all their points. The endocardium seemed normal. The musculi pectinati seemed increased in size. The left side was now opened. The muscular substance was found enormously hypertrophied. It was cut with difficulty. The chambers of its auricles and ventricles did not appear dilated. The visceral layer of the pericardium on this side was thickened and adhered tightly to the muscle wall. The heart wall shows parenchymatous changes; was dark reddish in color and shows areas of active inflammation, more advanced in some places than in others. The chambers contained a dirty, yellowish clot, which filled various recesses of the endocardium. The mitral valve was perfectly normal, only a few vegetations appearing upon the under surface of the valve leaflets. The cusps were not thickened and the structure of the valve did not seem to be in the least affected. The aortic valve showed a large deposit of calcareous material. In fact, the entire valve leaflets were calcareous. The left leaflet seemed to have formed a small aneurismal dilatation, for it was decidedly larger than the right, and a small hole appeared at its summit. The inner portion of the aortic valve was detached from the heart wall and floated free. Upon this condition was ingrafted a distinct, recent, and complete ulcerative process, as was shown by the almost total disintegration of the small, uncalcified portion of the valve which remained. The chordæ tendinæ were nowhere attached. The musculi pectinati had ulcerated, leaving no attachment of the valve to the heart wall at the place of their insertion except previously mentioned. Of proper valve structure but little remained, so advanced was the process. Weight, 410 grams. Liver was in a state of advanced fatty degeneration; was large, jelly-like in consistency, reddish in color, and capsule strips easily. Weight, 2,220 grams. Gall bladder contains a small quantity of bile. Spleen shows fatty degeneration; is enormously increased in size, friable, jelly-like in consistency, red in color. Weight, 695 grams. Left kidney: Capsule not adherent; surface yellowish, white in color, markings indistinct; weight, 350 grams. Right kidney presents same picture; weight, 320 grams. Calvarium not removed. Intestines normal.

P. H. B.

RHEUMATISM—EMPYEMA—ACUTE FIBRINOUS PERICARDITIS.

N. P.; age, 37; nativity, Sweden; admitted to United States Marine Hospital, Stapleton, Staten Island, May 2, 1901; died July 3, 1901.

Family history.—Negative.

Previous history.—Had penile sore eighteen years ago, with seqelæ. December last laid up for three weeks with pains all over body. In this hospital from April 9 to April 22, 1901, with malarial fever. Plasmodia found in blood. Discharged, recovered.

Present history dates from April 29, 1901. His wrist and ankle joints became swollen, painful, and tender: could walk only with considerable difficulty; had pain all over body, headache, weak. No temperature or cardiac murmur.

Treatment.—Sodii salicylate.

May 4.—Inflammation subsiding. May 4 and 6 had chills, followed by fever as high as 39.6. Plasmodia not found. Given quinine and temperature came down to normal under its exhibition both times.

12th.—Has had pains in elbow and side.

13th.—Still complains of pain in chest. Temperature, 39. Had no previous chill. Coughs a little and cough aggravates pain in chest. Signs of fluid in lower part of left chest. Left chest strapped. Receiving narcotin, sodii salicylate, and Warburg's tincture.

20th.—Maintains a temperature varying from 38 to 39. Pulse from 104 to 110; respirations from 24 to 28. General condition fair. Cyanosed. Pains in chest and left shoulder. Coughs considerably. Has areas of consolidation posteriorly. Bronchial breathing and bronchophony marked over these areas.

22d.—Friction sounds and râles over left lung anteriorly and posteriorly.

24th.—Signs of consolidation present. Rheumatic pains in joints.

June 1.—Sputum blood streaked. Temperature, respirations, and pulse remain about the same as last noted. Vomited this morning. Tongue coated. Diplococci found in sputum.

6th.—Temperature yesterday and to-day above 40. Pulse ranged from 118 to 122: respirations from 24 to 28. General condition fair. Emaciated.

24th–28th.—Signs of consolidation and râles in lungs persist. Receiving stimulants. Pulse soft and weak. Temperature controlled somewhat by sponge baths. Profuse muco-purulent expectoration. Coughs considerably at night. Complains of pain over region of gall bladder and is especially tender there. Some increase in liver dullness. Signs of fluid in chest. Chest aspirated; no fluid obtained.

13th.—Temperature more irregular than it was, this morning being normal. Increased liver and splenic dullness; tenderness over same.

14th.—Temperature, 39.4; pulse, 144 and soft. Increased stimulation, receiving strychnine, whisky, and glonoin; muco-purulent expectoration, profuse; coughs considerably at night.

20th.—Temperature ranges from 37 to 38; pulse of better quality. Put aspirating needle in side and back of left side, but obtained no fluid; needle not plugged, and free end could not be moved as when in a cavity, yet no respiratory movements of lungs made out.

24th.—Temperature normal for past four days; pulse ranged from 104 to 120; respirations from 28 to 36. Increase in liver and splenic dullness. Liver and spleen easily palpable. Mass is extremely tender. Flatness over most of left lung. Some respiratory sounds over apex. Chest again aspirated, but no fluid obtained. General condition worse. Is more emaciated and weaker. Mumbles to himself; slightly delirious at times. Abdomen somewhat tympanitic.

28th.—Rational. Temperature subnormal for past few days (36). Pulse much better, 96 to 100. Respirations around 36.

July 1.—Temperature normal. Pulse, 96. Tongue and abdominal signs same. Cough, with profuse muco-purulent expectoration, persists.

July 3.—Condition gradually grew worse and he died at 2 p. m.

Necropsy.—Out of deference to wishes of brothers and sister of the deceased, only a partial post-mortem examination made. Body of a male, aged apparently between

35 and 40 years. Emaciated. Intercostal spaces on left side of chest obliterated. Abdomen somewhat distended. Only abdomen opened and lungs and heart removed through this opening. Considerable clear serum in peritoneum. Spleen: Extends below ribs; large and hard; weighs 550 grams. Left kidney: Weighs 250 grams; enlarged, capsule nonadherent, markings fairly distinct. Right kidney: Weighs 200 grams; same as left. Large and small intestines: Show no gross lesions. Liver: Enlarged, weighs 2,900 grams; fairly firm. Shows granular fatty changes. Diaphragm on left side: Bulging downward somewhat. Pericardium: Is the seat of a marked fibrinous inflammation; is almost one-quarter of an inch thick, and lined with fibrinous deposit; no fluid. Heart: Covered with fibrinous deposits; weighs 450 grams; valves show no gross changes. Left pleura: Thickened and rough. Cavity filled with thick, flocculent purulent material. Anteriorly to left of heart is a separate compartment containing pus. Interest in this case lies chiefly in the fact that although repeated attempts at aspiration were made no fluid was obtained. As needle used was apparently in good working order, and as it was not plugged in inserting it into the chest wall, the probabilities are that the fluid was too thick to run in the needle. The signs of there being fluid in the pleural cavity were so marked in this case that although none was obtained by use of aspirating needle, it was decided to make an incision with a scalpel; but further efforts with aspirating needle having failed to obtain fluid, the use of the scalpel was deferred at the time. Attention is called to the value of such an incision under similar circumstances. Left lung: In a condition of atelectasis. Right pleura: Shows presence of small amount of clear serum. Right lung: Shows no marked abnormalities.

J. M. K.
P. H. B.

MALARIAL FEVER.

M. B.; white; age, 34; nativity, Ireland; admitted to United States Marine Hospital, port of New York, N. Y., September 9, 1901.

Patient gave a history of chills, followed by sweats, dating one week previous to entering. Headache and vomiting severe. Bowels costive and loss of appetite. Had been to Colon, arriving from there eight days previous to entering.

Physical examination shows tongue coated at edges, red in center. Spleen enlarged, heart and lungs negative. No tenderness in abdomen. Blood examination shows the æstivo-autumnal form of the malarial parasite present.

On September 12, about 4 a. m., the patient had a severe convulsive seizure, muscles contracted, feces and urine passing involuntarily, pupils dilated, and pulse slow. On the 14th he was somewhat better; his temperature from the 13th to the 15th ranged to 41° C., dropping to normal on the 15th to rise again on the 17th to 40, and continued so with few intermissions until death. Restlessness, gradual weakness, and at times coma; emaciation progressed rapidly. Examination of the blood on September 20 showed a larger number of organisms than formerly; in fact, at no time during the illness were they absent. On the 21st patient developed signs of pneumonia; respirations 40 per minute; bronchial breathing on both sides and râles at base of right lung. Patient died at 3.40 p. m. Treatment consisted of quinine sulphate administered by the mouth and also hypodermatically. Stimulation by whisky and strychnia, and occasionally morphia sulphate, to obtain rest.

Necropsy (*eleven hours after death*).—Body, male; rigor mortis not marked; emaciation present and body apparently anæmic; subcutaneous tissue, scant; anterior mediastinum, normal. Pericardial sac contained the usual amount of pale straw-colored fluid, and the visceral layer was covered with a layer of fibrin. The heart was opened in situ. The right auricle and ventricle were dilated and filled with ante-mortem clot. The valves were competent. Weight, 400 grams. Left lung was bound down to the chest wall throughout by firm adhesions. The apex crepitates. Through middle and lower lobes the cut surface shows marked congestion and along the bronchii small, grayish-white areas are seen, the size of the end of one's thumb. Weight, 1,050 grams. Right lung shows no adhesions between the lung and the chest wall. The lung is heavy, firm, and hard to the touch and cuts like liver; is grayish white in color, showing small white areas the size of a pea; it does not crepitate; sinks in water; weight, 1,555 grams. Liver: Is grayish yellow in color, and lobules are not distinctly seen; weight, 3,240 grams. Spleen: Weight, 190 grams. Left kidney: Capsules strip easily and kidney is yellowish in color; the pyramids are dark and distinctly outlined; weight, 195 grams. Right kidney: Same; weight, 180 grams. Intestines: Normal. Brain: The dura mater was adherent to the longitudinal fissure, and the vessels on the surface were remarkably congested.

J. B. G.
P. H. B.

Malarial fever, pernicious.

B. W.; age, 30; nativity, Norway; admitted to the United States Marine Hospital, Stapleton, Staten Island, July 1, 1901; died July 2, 1901.

Little information obtainable from patient owing to his great prostration and poor knowledge of English language. Has been sailing between New York and Colon. Vessel arrived in New York two weeks ago from last trip to Colon.

Has been ill, as nearly as can be ascertained, about ten days. Has had cramp-like pains in abdomen, nausea, and vomiting. No history of chills. Not much reliance, however, can be placed on what patient says.

Is intensely jaundiced; lips dry and cracked; tongue dry; area of hepatic dullness increased, tenderness over liver, especially in region of gall-bladder; respirations rapid and labored; pulse 96 and fair quality; temperature 37. Mentally, is dull, apathetic, and mumbles to himself. Condition is one of extreme prostration.

On July 2 condition suddenly grew worse; temperature, by rectum, 39; respirations very shallow. Despite medicine, he died about 12.15 p. m.

Blood examined; showed malarial parasites, both intracorpuscular and crescentic varieties; coarse pigment granules in abundance; great destruction of red blood cells. Urine, 1.012; acid, very albuminous, no bile or blood; microscopically, fluid, kidney and bladder cells and amorphous brownish granules.

Necropsy (*eighteen hours after death*).—Body, male; well developed; rigor mortis not marked; post-mortem suggilations marked; body intensely jaundiced. Skull cap removed; brain case, sinuses, and membranes show nothing of particular interest. Brain: Vessels of surface congested, cerebral-spinal fluid increased in amount. Anterior mediastinum: Normal. Remains of thymus gland not found. Pericardium: Contains a small amount of dark-colored fluid. Heart: Opened in situ; no dilation or hypertrophy; soft; contains ante-mortem clots extending into great vessels; orifices about normal size, and valves show no gross changes; heart muscle friable and shows fatty changes; weight, 350 grams. Pleuræ: Nothing of interest to note. Left lung weighs 600 grams; right, 650 grams; apices of both float and crepitate; lower lobes do not crepitate. Both lungs congested and œdematous. Blood in lungs of dark color. Great vessels and nerve trunks: Outside of being jaundiced, like all the tissues of the body, show no other changes. Diaphragm: Situation normal. Omentum: Jaundiced. Spleen: Enlarged, weighs 360 grams; soft and friable; appearance that of tarry spleen. Left kidney: Weighs 320 grams; capsule nonadherent; cortex thick; markings obliterated; cut section shows parenchyma swollen. Right kidney: Weighs 240 grams; findings same as left. Ureters and bladder and generative organs jaundiced. Intestines yellowish in appearance, otherwise normal. Pancreas: Nothing of interest found. Liver: Weighs 2,150 grams; large; slate colored.

J. M. K.
P. H. B.

Malarial fever, remittent—Hæmaturia.

C. B.; age, 44; nativity, Germany; height, about 5 feet 8 inches; weight, about 145 pounds; hair dark and moustache streaked with gray; eyes gray; admitted to the United States Marine Hospital, Stapleton, Staten Island, January 29, 1902.

Physical examination.—Face emaciated; cheeks deeply sunken; complexion jaundiced; tongue heavily coated brown; breath very foul; lungs negative, except for very rapid, jerky respiration; heart's action very slow, sounds are weak, second sound somewhat accentuated. Abdomen: Spleen enlarged and intensely tender on palpation; abdomen sunken; area over both kidneys intensely tender. Radial pulse, barely palpable. General condition of good muscular development. Skin over whole body very markedly yellow.

Patient was admitted in a state of extreme exhaustion; is so weak that he can scarcely talk, and it is very difficult to obtain intelligent answers from him. Was recently in Venezuela and left there on the 18th instant, after having been there for four days. On the 23d instant, while on the trip up, he was taken with a severe rigor, followed by heat and intense aching in head and limbs. Says that he has had no chills since then, and I am unable to obtain from him information as to whether he had been having previous attacks. On admission at 4 p. m. he was given whisky, 10 c. c., and hot-water bags were placed around him; in thirty minutes strychnine nitrate, gram 0.002. A short time after admission and just before above medication he had a severe rigor. Diarrhea and vomiting continued until 6 p. m., when there was some cessation and he became easier, though pulse continued very bad. Strychnine, gram 0.002 every two hours during the night, was ordered. Nine p. m.

about 75 c. c. of very dark, coffee-colored urine was passed. At about 10 o'clock p. m. patient became slightly delirious. Cups were applied over both kidneys, and after their removal hot fomentations of infusion of digitalis were applied over kidneys, being changed every few minutes, for one hour, after which a hot mustard pack was given, after which he was covered thoroughly with blankets. He became somewhat stronger and rested more quietly for a while, but his condition soon became worse and progressively more so until 7.30 a. m., January 30, 1902, when he died.

Necropsy.—Rigor mortis fairly well established eight and one-half hours after death. Skin over whole body and scleræ are of a markedly yellow tint. Pericardium, normal. Heart: Wall of left ventricle very thick; tissue healthy looking, not friable; valves normal, with a decidedly yellowish tint; right side of heart dilated; contents fluid and dark, contains no clots; weight, 370 grams. Left lung is bound to post thoracic wall, to pericardium, and to diaphragm by old adhesions. Lobes are also bound together by adhesions. Lower lobe congested, exudes a frothy serum, and is crepitant; weight, 408 grams. Right lung is bound to anterior thoracic wall and very extensively to diaphragm by old adhesions; presents same features as left except that they are more marked; weight, 478 grams. Extensive adhesions between gall bladder and mesentery. Gall bladder is almost entirely empty. Liver cuts normally and retains its shape, but is of a decidedly yellow color both externally and on cut section; weight, 1,358 grams. Spleen is very small; weight, 80 grams. Kidneys: Tissue of both is very firm, markings on cut section indistinct; capsule strips easily; papillæ noticeably enlarged; hæmorrhagic spots are seen. Stomach contains a very dark, thin fluid, with "coffee ground" looking preciptate.

T. G. D.
F. A. S.
P. H. B.

Malarial fever, intermittent, pernicious.

P. C.; age, 50; nativity, Alabama; admitted to Marine Hospital, Mobile, Ala., May 9, 1902.

This patient was admitted in an unconscious condition; therefore the history was not obtainable. From outside sources it was found that the patient had been suffering from malarial fever for at least three months. Upon his admission the diagnosis of malarial fever, intermittent, pernicious, was made, and was treated accordingly. The patient never regained consciousness and died May 12, 1902, at 3 o'clock p. m.

Necropsy (seventeen hours after death).—Body that of a colored muscular male, apparently 50 years of age; pupils dilated; rigor mortis well marked. Body opened by long incision from chin to symphysis pupis. Diaphragm attached between eighth and ninth ribs. Pericardium contains about 25 c.c. of fluid. Heart's valves are normal. Weight of heart is 230 grams. The left lung is œdematous, and the bronchial tubes of same contain a considerable amount of thick mucus. Weight of lung is 480 grams. The right lung is œdematous, and its weight is 570 grams. The spleen is soft and pulpy. Its weight is 180 grams. The capsule of the right kidney peels easily. The line of demarcation between the cortical and the medullary substance is well marked. There is a small cyst in the hylum of the right kidney. Weight of kidney is 180 grams. The capsule of left kidney peels easily. The line of demarcation between the cortical and the medullary substance is well marked. Its weight is 180 grams. The liver is dark brown, with blue-black post-mortem discolorations. The liver bleeds easily on section. Its weight is 1,400 grams. The gall bladder is distended with muddy, dirty, bluish bile. The intestines are normal. The brain and the spinal cord were not examined.

Cause of death, malarial fever, intermittent, pernicious.

W. P. M.

MENINGO-ENCEPHALITIS—MALARIA.

W. W.; age, 23; nativity, Alabama; admitted to the United States Marine Hospital at New Orleans, La., March 6, 1902; died March 14, 1902.

Previous history.—The general health has always been excellent, except for a severe attack of malarial fever some eight years ago. Seven years ago he contracted syphilis, for which he has taken treatment intermittently. Four years ago was attacked by a cow, from which he received kicks in the head and scrotum. The injury to his head necessitated some operation, the nature of which he does not know. Since receiving the kick in the scrotum he has developed a varicocele on the left side and suffers from neuralgic pains, from time to time, in the corresponding testicle.

Present illness.—The patient states that he is suffering from rheumatic pains in his limbs and body and also has neuralgia of the testicles. In addition to this, four days ago he received a cut on his forehead from a blow. This he treated by placing on it a plug of tobacco.

Physical examination.—Well nourished and well developed. All over the chest are seen scars, either of smallpox or cutaneous syphilis. On the face are one or two pock-marks, apparently typical of smallpox. On the forehead, beginning at the roots of the hair, is a linear cut, 4 cm. in length, proceeding vertically downward toward the left internal angular process. The cut is occluded by a plug of chewing tobacco. Some fluctuation is present around the site of the cut. On dressing the wound a small amount of pus exuded. The wound was cleansed, and on examination was found not to extend beneath the aponeurosis of the occipito-frontalis. A suspensory bandage was applied to the testicles and patient placed on antisyphilitic treatment.

For four days the patient's condition improved, and no abnormalities of the pulse or temperature were noted. On the morning of March 10, at 8 a. m., the patient was seized with a severe chill, and by 11 a. m. his temperature was 40° C. and his pulse 110. Examination of the blood showed the presence of pigmented malarial quotidian parasites. The patient was at once given 1 gram of quinine in solution, to be repeated an hour later, and the bowels were freely opened. Next morning patient seemed to be somewhat better, as the temperature had gone down to 39° C. The dose of quinine was repeated. On the next day nervous symptoms made their appearance, although the temperature was declining. The patient became delirious and violent and had to be restrained. On microscopical examination the blood showed that as yet the large doses of quinine had had but little effect on the number of parasites present in the peripheral circulation. The urine was somewhat scanty, high colored, and albuminous, and microscopically a small amount of blood was found to be present. The spleen at this period seemed to be but slightly enlarged. On the 12th the temperature dropped to 38° C., and the patient seemed to be better. On the 13th, however, although the temperature had not risen above 38° C., the patient was found to be comatose and was passing his urine involuntarily. It was also noticed that considerable œdema of the scalp was present, and more pus was found in the wound than hitherto. Thinking that a possible extension had taken place into the meninges from the wound, the cut was enlarged by an incision and the surrounding area explored, without, however, confirming anything more than the superficial nature of the injury. In spite of treatment, the patient never rallied from his comatose condition. At 7 p. m. the temperature rose suddenly to 39.3° C. It continued to rise until it reached 41° C. shortly before the patient's death, which occurred at 1.30 a. m., March 14, 1902.

Necropsy (*fourteen and one-half hours after death*).—Body of a colored male, well nourished and well developed. Height, 182 cm.; weight, 80 kilograms. Rigor mortis present. Scars of old cutaneous syphilis on chest and anterior aspect of limbs. A few pock-marks on face. On forehead small operative incision of scalp, beginning at the roots of hair over the frontal eminence and extending downward toward the left internal angular process. The incision is superficial in character and does not extend below the aponeurosis of the occipito-frontalis on the posterior portion of the scalp. At a point about opposite the apex of the lambdoidal suture is a depressed scar about 3 cm. in diameter. Some general œdema of the scalp is present. The scalp is now dissected away from the calvarium. No evidences of periostiah inflammation, fracture, or contusion found. Evidences of an old trephine wound situated at the junction of the parietal and occipital bones noted. The bone loss is fully repaired. The calvarium on being removed gives no evidences of any pathological changes. The dura mater presents nothing abnormal. Some opacity and thickening of arachnoid noted over the superior surface of the brain. The pia mater is universally congested and is the seat of numerous small punctate hemorrhages. This condition is especially marked over the left temporo-sphenoidal lobe. The color of the encephalon is noted to be darker than the normal, being of a faint chocolate tinge. The encephalon on being removed gives no evidences of abnormalities in regard to the condition or origin of the various cranial nerves. Upon its removal an increased amount of clear cerebro-spinal fluid noted in the base of the skull. The encephalon, weight 1,540 grams, seems to be considerably softened, and an excess of fluid is noted in the lateral ventricles, where ependyma is somewhat thickened and granular. Blood expressed from the cerebral arterioles and examined under the microscope is found to contain very many of the pigmented quotidian malarial parasites in all stages of development.

The body is now opened by the usual incision. Panniculus adiposus scanty, tissue dry and dark. On opening the abdomen the peritoneum is smooth and glistening, but rather dry. Some adhesions noted in the vicinity of the spleen. The thorax is now opened, and no abnormalities are found in connection with the mediastinal spaces. Right lung: Weight, 875 grams; congested; otherwise normal. Left lung:

Weight, 550 grams, is bound down everywhere by old pleuritic adhesions. It is found to be somewhat congested, but not so markedly as the right lung. Pericardium: Contains 30 c. c. of straw-colored serum; surface everywhere smooth and glistening. Heart: Weight, 450 grams; contains antemortem clots in all its cavities. All the valves are competent. No abnormalities noted. Spleen: Weight, 240 grams; slightly enlarged and adherent. On incision the splenic pulp is noted to be somewhat melanosed. Scrapings examined microscopically show abundance of blood pigment and intra-corpuscular malarial parasites. Liver: Weight, 2,800 grams, somewhat turbid and swollen. Scrapings show microscopically a considerable amount of pigment. Stomach: Normal, except for some congestion of the gastric arterioles. Right kidney: Weight, 240 grams; capsule strips readily. The kidney is dark on section and in a state of congestion; slight fatty degeneration noted. Left kidney: Weight, 330 grams; contains a small cyst in the superior portion; otherwise similar to right. Intestines: Collapsed and empty. No abnormalities noted. Pancreas: Weight, 120 grams; apparently normal.

Cause of death: Acute meningo-encephalitis supervening on malarial fever.

J. W. S.
C. P. W.

NEW GROWTH MALIGNANT MELANOTIC SARCOMA.

J. V. H.; Age, 62; nativity, Indiana; admitted to United States Marine Hospital, Cairo, Ill., June 3, 1901; died September 4, 1901.

On admission, patient was complaining of pains in back and breast and had burning on urination. He had some rise in temperature. He had been sick about three weeks. He had two tender external piles. He had had a dark fungoid growth cut from roof of mouth several months before he entered hospital. Roof of mouth was nearly all black, and a thin discharge flowed from site of operation. He recovered from his malarial fever attack, and later the piles ceased to bother him, but it was apparent that there was something more serious the matter with him. The growth in roof of mouth was recognized as a malignant one, and in the absence of a microscope he was readmitted July 18, 1901, for new growth malignant—melano sarcoma. There was a general infection of the body. The liver began to enlarge rapidly and on palpation the tumor masses could be easily felt. Jaundice of a deep tint came on. Patient got very thin. He suffered severely with pains in back and abdomen. Stools became clay colored. For the last three or four weeks he was kept up on extract of malt, beef tea, milk punch, and milk, and pain was relieved with morphine hypodermically. He died at 10.30 p. m., September 4, 1901.

Necropsy (*fifteen and one-half hours after death*).—Rigor mortis present. Both pupils dilated, left one a little more so than right. Conjunctivæ jaundiced. Skin a deep saffron color. Body greatly emaciated. Brain: Weight, 1,596 grams. One black, soft mass about 0.5 cm. in diameter was found on outer surface of brain, left side. Rest of brain normal. Heart: Weight, 370.5 grams. All valves were normal. Two black, soft masses 0.5 cm. in diameter were found on wall of right ventricle. Two dark masses about same size were noticed on anterior wall of pericardium. Small amount of fluid in sac. Right lung: Weight, 1,197 grams. Whole of lung bound down by pleuritic adhesions. Posterior part of lung, lower lobe, was taken up with black, hard mass. Several areas of hardened tissue (black) were scattered throughout lung. Left lung: Weight, 755.25 grams. Normal, except for few hard, dark masses found scattered about in it. There was a small amount of fluid of dark yellow color in abdominal cavity. All the mesenteric glands were enlarged and dark colored and hard. Liver: Weight, 4,332 grams, one enlarged mass of cancerous tissue. The hard, dark masses ranged in size from a pin's head to that of a hen's egg. There was very little normal liver tissue left. Gall bladder nearly empty of bile, and four or five gallstones about 0.5 cm. in diameter were found in it. Spleen: Weight, 299.25 grams; normal. There was a small supernumerary spleen about 1.5 cm. in diameter found just above the spleen. No dark patches found on or in the spleen. Pancreas normal. Right kidney: Weight, 285 grams. Several dark nodules were found on outer surface and two in structure of organ. Otherwise normal. Left kidney: Weight, 285 grams. Same as right kidney. Suprarenal capsules were enlarged and of a dark color. Other organs and tissues normal, except there was an entire absence of a vermiform appendix. He had never been operated upon for removal of the appendix. There could not be found the least sign of a stump of an appendix.

J. H. O.

CARCINOMA OF STOMACH.

H. S.; age, 50 years; nativity, New York; admitted to United States Marine Hospital, port of New York, N. Y., May 20, 1901.

Was previously admitted April 4, 1901, and discharged May 23, 1901, improved of chronic bronchitis. While in the hospital at that time he frequently complained of indigestion and pain in the stomach. At the time of his discharge these symptoms were hardly noticeable. On his readmission May 20 the gastric symptoms predominated, although the bronchial condition remained. He gave history of severe hemorrhage on May 18, constant pain in the stomach, vomiting, and anorexia. Is quite anæmic and emaciated.

Examination reveals an emphysematous chest and evidence of old pleuritic adhesions. Epigastrum is tender, but no tumor is found. Save for gradually increased emaciation, his symptoms and condition remained about the same until July 1, when he had a severe hemorrhage and blood also appeared in his stools. Vomiting became frequent, often containing blood. Anorexia complete, and pain and distress in his stomach severe, especially after taking nourishment. Weakness gradually increasing until midnight, August 12, 1901, when he died.

His treatment consisted principally of peptonized milk and liquid peptonoids.

Necropsy (*twenty-four hours after death*).—Emaciation marked. Pupils evenly and moderately dilated. Eyes glazed. Rigor mortis absent; subcutaneous tissue scant. Anterior mediastinum, emphysematous. Heart: Open in situ. Pericardium: Smooth and glistening; fluid about 75 c. c., straw colored. Heart contained whitish patches formed on surface of left ventricle. Small, irregular, and not elevated. Left side of heart stopped in systole; ventricles contained a few small dark clots. Right side of heart stopped in diastole, contains small clots, partly dark, partly red. Valves normal, competent to hydrostatic test. First portion of the aorta contains small yellowish elevated patches, one also on the aortic valve. Coronary arteries patulous. Weight, 250 grams. Left pleural cavity contains 250 c. c. of fluid. On posterior surface of left lung is found yellowish white plates. This portion of the lung is bound to the diaphragm by adhesions, but not to the thoracic wall. At the base and in posterior portions is found hypostatic congestion, most marked in lower lobe. Upper lobe crepitates. Right pleural cavity contains normal amount of fluid. Right lung, in posterior portion of lower lobe, congestion is present, otherwise the lung presents about the same features as the other. Its anterior border is emphysematous. Weight, 400 grams. Bronchial glands are enlarged. Liver: Surface is smooth, cuts easily, cut surface has yellowish dark areas of congestion. Stomach: Examination of the stomach was most difficult, as the walls of the stomach were intimately involved in the carcinomatous growth, which was so extensive that all normal relations were obliterated. The new growth had extended into the spleen, and there was a necrosis of this organ. The growth seemed to involve the cardiac end of the stomach, as a small portion of the mucous membrane toward the pylorus was all that appeared natural. The pancreas contained nodular growth, varying in size, it cut hard and felt firm to the touch. The kidneys were normal to all appearances, the left weighing 130 grams and the right weighing the same. Other organs seemed normal. Calvarium not removed.

J. B. G.
P. H. B.

CARCINOMA.

S. F. W.; age, 55 years; nativity, Sweden; admitted to the United States Marine Hospital, San Francisco, Cal., December 3, 1901; died December 26, 1901.

History.—The patient stated that he has had for the past six months a choking sensation after swallowing. Ten weeks ago he vomited a quantity of blood, and he passed blood by his rectum for several days. After this he noticed a lump in his abdomen on the right side, and his abdomen has been swelling ever since. He has distress after eating, but has not vomited lately. He has been losing weight rapidly. He has no appetite and his bowels are constipated. He has a cough with profuse expectoration. There is dullness over the apex of the right lung, with bronchial breathing and increase of vocal resonance. The liver is greatly enlarged, extending downward almost to the ilium. Its surface is rough and nodular. The patient grew thinner and weaker each day. He would take only a small quantity of liquid food at a time. He had very little pain, except on the last three days. December 16 he vomited blood, which he stated made him feel better. He died from exhaustion December 26, 1901, at 3.40 p. m.

Necropsy (*eighteen hours after death*).—Height, 166 cm. Rigor mortis fairly well marked. The girth of the abdomen is 90 cm. The thickness of the abdominal wall is 1.5 cm. The abdomen contains 300 c. c. of sero-sanguineous fluid. The liver is enormously enlarged, displacing the intestines downward. Brain: Weight, 1,500 grams; measurements, 18 by 15 by 9 cm. The tissue is normal with the exception of a small cyst in the choroid plexus. The pericardium contains 50 c. c. of reddish-yellow colored fluid. Heart: Weight, 350 grams; measurements, 10 by 10 by 5 cm. The wall of the right ventricle is 0.75 cm. thick; of the left ventricle 2 cm. thick. The valves of the heart are normal. The lungs are bound down by numerous adhesions. Right lung: Weight, 785 grams; measurements, 23 by 12 by 6 cm.; tissue crepitant; color, reddish slate. Left lung: Weight, 635 grams; measurements, 22 by 13 by 5 cm.; tissue is similar to the other lung. Spleen: Measurements, 14 by 8 by 3 cm.; the capsule is adherent to the parietal peritoneum; tissue, soft. Left kidney: Weight, 250 grams; measurements, 15 by 8 by 4 cm. There is a small nodule similar to those in the liver, on the upper border. The capsule strips with difficulty. The tissue is of a yellowish-red color. Right kidney: Weight, 200 grams. There are no nodules in this kidney. The tissue is similar in appearance to the opposite organ. There is a growth the size of a hen's egg on the lesser curvature of the stomach. The growth is rough and the mucous membrane covering its surface is altered and thickened. The growth is hard throughout and of a white color. The pancreas is pushed upward and contains a neoplasm continuous with the one in the wall of the stomach. The intestines are apparently normal. Liver: Weight, 7,280 grams; measurements, 39 by 32 by 15 cm. The tissue is filled with yellowish-white tumors, varying in size from an orange to a millet seed. Nearly all the large tumors are much softened in their interior. A microscopical examination of the tissue shows that the liver is infiltrated with cancer cells.

W. G. S.

SCALD BY STEAM OF FACE, ARMS, FOREARMS, HANDS, CHEST, BACK, LEGS, AND ABDOMEN.

J. H.; age, 36 years; a native of Ireland; admitted to the United States Marine Hospital, San Francisco, Cal., December 25, 1901; died January 4, 1902.

History.—On the day before admission patient was scalded by steam, under a pressure of 110 pounds, escaping from a bursting pipe on the vessel where he was employed as fireman. He was troubled by a constant cough, with expectoration of mucus, which one day before death became streaked with blood. After the first day patient was unable to speak above a whisper. During his illness patient could take liquid food and the bowels and kidneys were active. The extensive burns were dressed daily with a mixture of picric acid and alcohol, and at the time of death repair was well under way. The temperature steadily rose from normal on admission to 39.4° C. at time of death. The respiration was 50 and the pulse 132. Patient became gradually weaker and died from exhaustion.

Necropsy (sixteen and one-half hours after death).—Body of a well-developed male; height, 176 cm.; weight, 200 pounds. Rigor mortis well marked; suggillations present; contractures of fingers and wrists in direction of flexion. The face, ears, neck, upper portion of chest, back from shoulders to buttocks, the lumbar regions on each side, the buttocks, forearms from elbows down, legs from knees to ankles, show burns varying from the first to the third degree, inclusive. Brain: Weight, 1,380 grams; measures 19 by 13 by 8 cm.; ventricles normal. Abdomen: Walls, 4 cm. thick; intestines distended by gas and of a grayish color. Heart: Pericardium normal; weight of heart, 437 grams; measures 8 by 9 cm. Wall of right ventricle 1.5 cm. thick; left, 2 cm. thick. Valves competent by the hydrostatic test and normal in appearance. The right ventricle, auricle, and the pulmonary artery are filled with a large ante-mortem clot. Larynx: Upper part shows purulent ulceration; congestion extending down trachea about 14 cm. Lungs—Left lung: Weight, 937 grams; measures 22 by 19 cm. It is of a slate color; shows hypostatic congestion; the lower lobe does not crepitate; there is some consolidation, and the lung sinks in water. Right lung: Weight, 1,330 grams; measures 23 by 13 cm.; the lower lobe does not crepitate and shows congestion. Spleen: Weight, 318 grams; measures 13 by 9 by 5 cm.; reddish-brown color; capsule strips; organ soft and friable. Kidneys: Left weighs 220 grams; measures 12 by 6 by 3.5 cm. Right weighs 200 grams; measures 11.5 by 6 by 3.5 cm. Both kidneys normal. Stomach: Rugæ normal; a patch of congestion at cardiac end of stomach. Duodenum: Normal; no ulcers. Pancreas: Cuts with considerable resistance. Liver: Weight, 315 grams; measures 29 by 19 by 9 cm.; pale brown color; capsule strips; shows increase in interstitial tissue; very firm when cut; edges sharp and hard.

J. N. F.
W. G. S.

ACROMEGALY.

J. N. O.; age, 36 years; white; nativity, Pennsylvania; admitted to the United States Marine Hospital, San Francisco, Cal., January 30, 1901; died September 24, 1901.

History.—Patient stated that about six weeks before he came to the hospital he had had a chill, which was followed by a cough and profuse expectoration. On several occasions the sputum was streaked with blood. He said that he was dyspnœaic upon exertion, and that he had lost 30 pounds in weight during the last few months. He had suffered from night sweats a year before, but had had none recently. The patient's knees and right wrist were red and swollen and, he said, pained him very much. There were no tubercle bacilli in the sputum. The temperature was normal. The pain and swelling subsided to some extent in the knees and wrist, but the second phalanges of the fingers were then attacked in the same way.

On February 2 the fingers, wrists, lips, and ankles were greatly swollen, and there was an enlargement of the internal condyle of the right knee, which was very painful. There were also occasional headaches, accompanied by nausea and vomiting. March 19, 1901, the lower teeth were found to be on the same line as the upper, due to the great enlargement of the lower jaw. These symptoms continued, and in July there was œdema of the legs and feet and beginning atrophy of the optic nerves, the right eye being more affected than the left. In August and September he had a slight rise of temperature every evening; his pulse ranged between 76 and 88. He became very feeble and died September 24 at 6 a. m.

Necropsy (*five and one-half hours after death*).—Body much emaciated; weight, 130 pounds; height, 168 cm.; rigor mortis present, but not well marked. Hand, from base of thumb to tip of middle finger, 18 cm.; foot, from tip of big toe to heel, 25 cm.; circumference of thorax, 73 cm.; knee circumference, 33 cm.; ankle circumference, 29 cm.; wrist circumference, 18 cm. (lower end of ulnar). Skin, light-brown color. The skull is 5 mm. thick at saw line. Brain: Weight, 1,200 grams; lymph deposit over surface; tissue normal. Pituitary fossa—breadth. 2 cm; depth, 1.3 cm.; weight of gland, 76 centigrams. The pituitary gland fills the fossa. A gelatinous substance exudes from the infundibulum. Heart: Weight, 232.50 grams; measurement, 9 by 8.50 cm.; 50 c. c. of fluid are present in the pericardium. There is a small chicken-fat clot in the pulmonary artery; this is easily detached. The lungs had to be torn to pieces in order to remove them. Miliary tubercles are present in apex of right lung and along posterior border of left lung. Spleen: Weight, 135 grams; measurements, 12.50 by 8 cm.; trabeculæ very prominent; color, reddish brown. Left kidney: Weight, 155 grams; cortical part, 0.5 to 1 cm. in thickness; it is streaked with yellow. Right kidney: Weight, 148 grams; tissue fatty; pancreas 18 cm. long; tissue feels hard to the touch. Liver: Weight, 1,255 grams; bluish brown in color, mottled with yellow spots; tissue soft. Other organs are normal.

W. G. S.

COMMINUTED FRACTURE TIBIA AND FIBULA.

Embolus pulmonary artery.

O. S.; white; age, 23 years; nativity, Sweden; admitted to the United States Marine Hospital, San Francisco, Cal., September 8, 1901; died September 10, 1901.

History.—At 5 p. m., September 8, 1901, the patient received a blow on the left leg from the breaking of an iron bit, to which a cable was attached, on board the U. S. army transport *Sumner*. He was knocked backward, striking the back of his head and neck against the anchor chain.

Both bones of the leg were broken and much comminuted, but the skin was not ruptured. There was a slight bruise on the back of his head a little to the left of the occiput. He complained of much pain, but quieted down during the night. At 5 a. m., September 9, he was sleeping, but at 5.10 a. m. the nurse found him on the floor by his bed in a semiconscious condition. He had passed his urine involuntarily. The nurse called the interne, who found the patient could not speak. His breathing was shallow and sterterous; pulse rapid; skin hot and dry, slightly cyanosed; muscles rigid; pupils equal. The urine was examined, but no sugar or albumen was found. The temperature soon rose, and at 4.30 p. m. it was 40.2°.

The patient remained unconscious until he died. Even the eye reflexes were absent. The breathing was quick and noisy, and toward the end became slower and labored. His lungs were examined frequently, but there was no evidence of consolidation. The fever was controlled at first by baths, but during the last day baths had no effect upon the temperature, and one-half an hour before death it was 41.40°. He died at 8.30 p. m., September 10, 1901.

Necropsy (*twelve hours after death*).—Height, 170 cm. There are three abrasions of the skin on outside of left leg, one on inside of right leg, and one on outside of left elbow. Ecchymotic spots are present on both sides of left leg, extending from knee to ankle. Both bones of left leg are broken at the middle third of the limb. There is a small contusion on the left side of the skull, a little above the occipital protuberance. There is a prominent ridge 3 cm. below the occipital protuberance, this ridge extending 4 cm. to the right. Post-mortem rigidity is well marked. Post-mortem discoloration is also well marked in dependent portions of the body. There is no fracture of any of the bones of the skull. The inner table of the skull is intact. Brain: Membranes are not ruptured; no evidence of hemorrhage found, either on the surface, in ventricles, or in any of the tissues. The abdominal fat is 2.50 cm. thick. The intestines are of a grayish color; the lower end of the colon is distended with feces; the appendix is normal, except a small adhesion to the iliac fossa; there is a normal amount of fluid in the pericardial sac. Heart: Weight, 330 grams; measurements, 9 by 11 cm.; valves normal. A chicken-fat thrombus is present in right ventricle, extending into the pulmonary artery; this thrombus is firmly attached to the walls of the heart and can only be removed with difficulty. Left lung: Weight, 787 grams; measurements, 18 by 17 cm.; color, dark bluish externally, reddish brown internally; tissues firmer than normal; most of the lung is noncrepitant; it sinks partially in water. Right lung: Weight, 915 grams; color and condition is the same as left lung. Spleen: Weight, 115 grams; measurements, 7 by 10 cm.; color, dark brown; tissues apparently normal. Left kidney: Weight, 165 grams; measurements, 12 by 7 by 4 cm.; tissues congested, but otherwise normal. Right kidney: Weight, 160 grams; measurements, 12 by 6 by 2 cm.; condition of tissue the same as left kidney. Liver: Weight, 1,985 grams; measurements 25 cm. by 18 c. c. by 7 cm.; tissue normal.

W. G. S.

CONTRIBUTED ARTICLES.

SANATORIUM TREATMENT OF TUBERCULOSIS—ANALYSIS OF THREE HUNDRED CASES TREATED AT THE UNITED STATES MARINE-HOSPITAL SERVICE SANATORIUM, FORT STANTON, N. MEX.

By Surg. P. M. CARRINGTON.

[Read at meeting of American Medical Association, Saratoga, N. Y., June 10-13, 1902.]

My object in this paper will be to show briefly the results obtained in 303 cases of pulmonary tuberculosis, at Fort Stanton, during a period of about two and one-half years, by the open-air climatic treatment. In computing the value of these statistics the chronic nature of tuberculosis of the lungs and the comparatively short duration of treatment must be considered, the average length of treatment in the fatal and discharged cases having been something less than six months, including cases in every stage of the disease; in some the history only covered a period of two or three months, and in others the disease had existed for years

In 142, or nearly 50 per cent, the history of the disease extended over a period of one year or more prior to admission. In a few cases the physical signs indicated lesions, slight in extent, and there was little aside from the presence of bacilli in the sputum on which to base a diagnosis, but unfortunately the moderately and far-advanced cases outnumbered the early cases nearly five to one; some were so far advanced as to excite wonder that they were able to survive the journey to the sanatorium, and in one case death occurred at the railway station before the unfortunate patient could be transferred to the sanatorium. The statistics, however, are given you as they stand, and notwithstanding the great predominance of far advanced cases it is believed that the results attained will offer some encouragement to those interested in the climatic treatment of tuberculosis of the lungs.

LOCATION, CLIMATE, ETC.

Fort Stanton is located in Lincoln County, N. Mex., and has an elevation of about 6,100 feet above sea level. The annual rainfall is from 14 to 17 inches and the mean average temperature is 55.6°. The following is the weather observer's record for the year ended April 30, 1902:

Month.	Temperature.			Precipitation (rain and snow).	Cloudy days.	Partly cloudy days.	Clear days.
	Mean.	Maximum.	Minimum.				
1901.							
May	67.6	73.2	41.9	0.64	1	15	15
June	56.8	70	43.7	1.34	2	3	25
July	69.2	79.5	59	3.12	0	9	22
August	69.5	83.1	55.9	1.85	3	5	23
September	61.1	76.4	45.8	2	2	12	16
October	52.9	68.7	37.1	1.76	4	7	20
November	45.1	58	31.2	2.85	4	5	21
December	35	49.9	21	.95	1	5	25
1902.							
January	36.6	52.1	21.2	.05	4	7	20
February	38.5	55.4	21.6	.38	2	2	24
March	40	55.5	25.5	.22	2	5	24
April	53.3	72.4	34.2	.00	0	4	26
Yearly average	51.3	66.2	36.5	15.16	25	79	261

Cloudy means seven-tenths of the entire day; partly cloudy means less than seven-tenths of the day.

Fort Stanton was formerly a garrisoned post of the United States Army, but had been abandoned for several years when taken charge of by the Marine-Hospital Service, the old barracks and other buildings being remodeled and repaired for use as wards, quarters, etc. It was the first sanatorium established by the National Government for the treatment of tuberculosis.

The buildings were in such a dilapidated condition as to be absolutely uninhabitable when the station was established by Executive order of April 1, 1899, and owing to the then distance from the railroad (about 75 miles) there was difficulty in getting workmen and material, and something over six months elapsed before any of the buildings were ready for occupancy, the first patient being received November 18, 1899. We now have accommodations for about 150 patients, but additional buildings are being repaired for use as wards, which will increase our capacity to about 225 patients.

We have our own ice and cold-storage plants, a fully equipped steam laundry, and a modern system of waterworks and sewerage.

In establishing a sanatorium for consumptives at Fort Stanton it was the intention of Surgeon-General Wyman that the station should, in time, become in large measure self-supporting. With irrigation all kinds of farm and garden products grow luxuriantly, and while it is aside from the purpose of this paper, I may say in passing we produce all of our hay, a considerable portion of our grain, and all our garden truck. A herd of Jersey and Holstein cows gives us an ample supply of pure, fresh milk, and also furnishes a portion of our butter. We are starting a herd of range cattle, with the intention of producing our own beef. We also breed horses to a small extent, raise chickens, pigeons, hogs, and Belgian hares.

The industrial character of our sanatorium enables me to give employment to a considerable number of recovered and convalescent patients, thus retaining them in advantageous climate and sanitary environment for a longer period than they would otherwise remain. The difficulty, by the way, of retaining patients under treatment and observation for a sufficient length of time is one which we encounter daily. Patients unaccustomed to restraint, except while on board ship, soon tire of the necessarily rigid regulations of sanatorium life.

The use of alcoholic stimulants is forbidden except as ordered medicinally for a small percentage of cases. This is considered a hardship not long to be borne by those who have been steady and often hard drinkers for many years. The problem of how to keep men, accustomed as they are to the license of large seaports and the lake and river cities, interested, amused, and satisfied in an arid country region is one not easy of solution. Unfortunately for our statistics those who allow their longing for the delights of city life to curtail their residence in the sanatorium are usually those with fair or good chances of ultimate recovery, while the unfavorable cases, almost to a man, remain. Several cases, favorable when discharged against advice, have returned after absences of two to six months, only to swell our mortuary records.

We try to keep the minds of our patients occupied. Cards, checkers, and other indoor games are provided (to be played out of doors as a rule). A few plant flower gardens and some have taken to golf, which affords a very suitable amount of exercise to a large number of ambulant cases. We have a very fair library, which enables many to interest their minds while taking necessary rest. Horseback riding is allowed a limited number of cases which are practically convalescent.

STATISTICS.

From November 18, 1899, until April 30, 1902, the period covered by these statistics, 303 cases of tuberculosis have been treated, with the following results:

Patients died	45
Discharged not improved	9
Discharged improved	97
Discharged apparently recovered	37
Remain under treatment	115

Their ages were as follows: Under 25 years, 47; from 25 to 34 years, 118; from 35 to 44 years, 91; from 45 to 54 years, 33, and 14 cases 55 years of age and older.

In 31 cases, or a little over 10 per cent, there was a history of tuberculosis in either father or mother of patient. In 226 cases both lungs were affected, and in 77 only one lung was involved. The tubercle bacillus was demonstrated in the sputum of 273 cases and in 123 other organisms were found, their order of frequency being as follows: Staphylococcus pyogenes aureus, streptococcus pyogenes, micrococcus tetrogenes, sarcina aurantica, leptothrix buccalis (probably from mouth), bacillus of Friedlander, diplococcus, resembling morphologically Neisser through staining by Grams's method, pneumococcus absent.

With the exception noted, two or more of these organisms were usually found in one specimen.

Pulmonary hemorrhage occurred in 117 cases, in 77 before but not after admission, in 12 after but not before, and in 27 both before and after admission, showing that the risk of hemorrhage at this altitude and under conditions prevailing at this sanatorium is not so great as is popularly supposed. In 12 cases, all advanced, the larynx was involved; 46 cases were complicated with syphilis and 36 with malarial fever; in 1 case the bladder alone was infected, the bacillus being found by guinea-pig experiment. Empyema was present in 3 cases. Tubercular meningitis occurred in 3 cases, and in 3 there was involvement of testicle. Of the 188 cases who died or were discharged, 45, or 24 per cent, died, 9, or 5 per cent, were discharged unimproved, and 37, or 20 per cent, were discharged apparently cured. Ten fatal cases and 17 improved and unimproved were under treatment less than one month. One death resulted from acute nephritis, 1 from cerebral hemorrhage, and 1 from syphilis of the brain. Eliminating from the calculation those cases which were under treatment less than one month, the percentages would be as follows: Died, 23 per cent; improved, 53 per cent, and apparently recovered, 24 per cent.

The above figures include all cases of tuberculosis treated at this sanatorium during this period, and the moderate and far-advanced cases outnumber the early cases by about 5 to 1. In considering these statistics I have divided the cases into two classes—the first stage or early cases, in which there was no appreciable consolidation, one or both lungs affected, with or without bacilli in sputum, with slight or moderate constitutional disturbance, and with localized moist râles; the other class includes second and third stage, or moderately and far-advanced cases, with appreciable consolidation and physical signs attending same, one or both lungs affected, considerable to very severe constitutional disturbance, with or without bacilli in sputum, and including those cases in which there was evidence of cavity formation. Of the first class we have treated 54; 40 have died or been discharged, and 14 remain under treatment. The family history was positive in 7 and negative in 47 cases. In 30 cases but one lung was involved, and in 24 both lungs. Tubercle bacilli were found in the sputum of 39 and other organisms in 27. In 50 per cent of those in which bacilli were not demonstrated in the sputum there was syphilitic infection.

Tuberculin is not used for diagnostic purposes as a routine measure, owing partly to the extreme prevalence of syphilis in the class of people from whom we draw our patients. We have recently begun injecting the sputum of patients in which the bacilli can not be demonstrated into the peritoneal cavity of guinea pigs, and in the cases in which this was done there were positive results in 66⅔ per cent and negative in 33⅓ per cent. Hemorrhage occurred in 8 cases of this series, but in only 2 after arrival at the sanatorium. In 2 cases pulmonary hemorrhage was the first indication of the existence of the disease. Of the 40 cases of this class in which treatment has terminated, 1, or 2½ per cent, died, death being due to acute nephritis; 2, or 5 per cent, were discharged improved, and 20, or 50 per cent, were discharged apparently cured; or eliminating 10 unimproved and improved cases which were under treatment less than one month and the percentages are, apparently cured, 66⅔ per cent; improved, 30 per cent, and died, 3⅓ per cent. Eight of the cases still being treated are convalescent, and 6 are much improved both physically and in condition of lungs.

The average length of treatment in the 40 discharged cases was 134 days; in the 22 apparently cured cases, 243 days.

SECOND AND THIRD STAGE, OR ADVANCED CASES.

Total number treated under this heading, 249. In 24 cases, or something less than 10 per cent, there was a history of tuberculosis in either father or mother; in 196 cases both lungs were involved and in 53 but one lung. The tubercle bacillus was demonstrated in the sputum of 234 cases and other organisms were present in 96 cases, their order of frequency being:

Staphylococcus pyogenes aureus	1
Streptococcus pyogenes	2
Micrococcus tetragenus	3

The results of treatment in the above cases were as follows:

Died	44
Discharged not improved	7
Improved	80
Apparently or clinically cured	17
Remain under treatment at date of this report	101

In one of the cases included in the above series the bladder alone was affected and the guinea-pig experiment was used to demonstrate the tubercle bacilli. In one case the diagnosis was not confirmed, 0.015 tuberculin having failed to produce reaction.

In 109 cases pulmonary hemorrhage occurred during the course of the disease. In 71 cases there was hemorrhage prior to but not after admission and in 26 both before and after admission, and in 12 cases after but not before admission. The larynx was involved in 12 cases and syphilis complicated in 36 cases. Of the 44 fatal cases included in this record, 10 were under treatment less than thirty days and 1 died at the railroad station en route to the sanatorium. One death was caused by cerebral hemorrhage and 1 by cerebral syphilis. In the former case the pulmonary lesions had almost entirely healed and in the latter they were of secondary importance to syphilitic lesions.

Of the 148 cases under this heading in which treatment has terminated, 44 (or 29 per cent) have died, 7 (or 5 per cent) were discharged unimproved, 80 (or 54 per cent) were discharged improved, and 17 (or 11 per cent) have been discharged apparently cured. Eliminating 10 fatal, 2 unimproved, and 5 improved cases, which were under treatment less than one month, the percentages are as follows: Died, 26 per cent; not improved, 3 per cent; improved, 57 per cent, and apparently cured, 13 per cent. The condition of the 101 patients remaining under treatment is as follows:

Apparently cured	2
Convalescent, much improved	68
Arrested	21
Worse	10

MEASURES TAKEN TO AVOID INFECTION OF THE SANATORIUM.

Under this head the most important item, of course, is the disposal of the sputum of patients. Each patient is provided with a pocket sputum flask and a hand or bedside sputum cup, and they are forbidden to expectorate except into these receptacles, and no patient will be retained at the sanatorium who expectorates in any other place than the cups provided. All metal cups are disinfected by steam each day, the Seabury & Johnson cups being burned. A careful daily check is kept, and any patient failing to present his cups for disinfection is at once reported to me for investigation.

While disinfection by steam is effective, there can be no question that destruction by fire is a preferable method, mainly because it is easier and more cleanly. I am now making arrangements to substitute a crematory for the steam disinfection of sputum, the main difficulty heretofore having been the economical construction of a destructible pocket sputum flask.

All tableware is treated by boiling water after each meal. Clothing and bedding used by patients is disinfected by steam before going to the laundry. Once each month rooms and wards occupied by patients undergo disinfection, the methods employed being sulphur fumigation, formaldehyde, and washing with bichloride, 1:1000.

TREATMENT.

The essential elements of treatment followed here are life in the open air, ample feeding, and rest or graduated exercise. The patients live out of doors the entire day and sleep with doors and windows wide open; many during the spring, summer, and autumn months are quartered in tents. After a brief period of such a life patients become very fond of it and there is very little trouble in persuading them to stay out of doors almost the entire time. Ordinary colds are extremely rare when patients become accustomed to the open-air life, and we have not had a case of pneumonia since the station was opened, nor have I seen a case in Lincoln County, although I have had a fairly extensive general practice for over a year in resident Mexican and American families.

Cases quartered in tents do better than similar cases in wards; several in the past month have gained from 10 to 20 pounds in weight, and even febrile and apparently hopeless cases do better in tents; they are more comfortable, have less fever and cough, and better appetite. The tent dweller loses all fear of night air, and the mode of life is so popular that I have recently been obliged to make requisition for an additional number of tents.

REST AND EXERCISE.

Most tubercular patients seem to be under the impression that they should take as much exercise as they can possibly stand, and, I must confess, before coming West I had much the same idea, but my experience at Fort Stanton convinces me that more patients are injured by too much exercise than by too little. We find it constantly necessary to restrain our patients, and order rest when they think themselves able to indulge in all sorts of exercise.

Cases having fever and hemorrhages, of course, require absolute rest, and those in which the disease is actively progressive should take but little exercise and that of the gentlest sort. For patients who are convalescent or making decided progress toward recovery we provide golf, croquet, and quoits; some use the punching bag and a greater number take daily walks, and a few of the best cases are allowed to take moderate horseback exercise. While the relative amount of rest and exercise necessary for various stages and classes of the disease is difficult to specify, in general I would say that the amount of exercise allowable should be in inverse ratio to the activity of the disease; each case should be considered alone and rest or exercise prescribed with the same care we use in prescribing other remedies.

MEDICAL TREATMENT.

Medicinally we treat the disease symptomatically. For the cough heroin or heroin and terpin hydrate and codine are our most effective remedies, but comparatively few cases require remedies after the first few weeks. Dyspepsia, perhaps, gives us more trouble than any other one symptom; for this pancreatine and salol are often effective. Warburg's tincture and other bitter tonics sometimes restore the appetite, and we find the various malt preparations very valuable tonics. Frequently we find that loss of appetite is caused by constipation or torpid liver, and in such cases sodium phosphate gives excellent results. A large number of remedies of reputed or established reputation have been tried with varying success, but, broadly speaking, our efforts have been to keep in normal condition all the functions of the body, promote and satisfy a healthy appetite, keep patients in the open air practically all the time, and by watchful care see that they do not prejudice their chances of recovery by injudicious physical exercise or surreptitious overindulgence in stimulants.

Whisky has its place in the treatment of tuberculosis, and we use it in something less than 10 per cent of our cases. Its excessive use is, of course, prejudicial, and we have had several cases which were previously doing well, but dated their decline from excessive drinking of smuggled whisky.

Hemorrhages are usually controlled by ordinary remedies, but whenever persistent or copious we have resorted to the use of Murphy's treatment—the injection of nitrogen into the pleural cavity. I have now under treatment two cases in which this treatment controlled what I am satisfied would have been fatal hemorrhages, and they are now both making very satisfactory progress toward recovery. In our experience this treatment seems to exert no beneficial influence on the lung lesions, aside from the control of hemorrhage.

Food is an element of treatment equally as important as air, and our aim is to supply patients all they can eat as often as they desire it. A diversified diet is prescribed, meat and fresh milk being served at all meals and eggs for breakfast and supper. We also have a lunch of milk and crackers at 10 a. m., and raw eggs and milk in the afternoon are prescribed for patients requiring additional nourishment. We have had excellent results with tropon; one case on a diet of milk, raw eggs, and tropon gained 14 pounds in a short time.

DURABILITY OF CURE.

The question is often asked "If I become cured here now will the cure be permanent, and may I with safety return to my former home and occupation?" We have only been able to keep track of a few of our discharged cured patients, and in none of these has there been a return of the disease, but the data at present available are not sufficient to warrant giving a positive reply either in the affirmative or negative to the question. I advise that apparently cured first-stage cases remain in this or similar climate at least six months after disappearance of all symptoms, and second and third stage cases twelve months. Many of the latter would do better to reside permanently in a favorable climate. I cite the following cases as bearing upon the point: W. D., aged 50 years, in the second stage of the disease, with consolidation of the upper lobe of the right lung, was admitted June 14, 1900, having had at that time the disease twenty months; bacilli were demonstrated in his sputum, and there was mixed infection. He was discharged, apparently cured, January 15, 1901, and employed as cart driver; his appearance was that of perfect health, and he remained well until June, 1901, when he had an attack of influenza. This disease ran its course, but the patient did not recover strength, and the cough continuing beyond the usual period led to a reexamination of his sputum, when the tubercle bacillus was again found. He was very ill for several months, and at one time it was thought he would die, but he is now almost well again. There is scarcely a possibility of reinfection in this case, but rather this seems to have been a breaking down of a partially or entirely encapsulated mass of tubercular deposit during the attack of influenza.

A second case is more encouraging: W. K., age 38 years, admitted December 19, 1899, with consolidation of the right apex and the left upper lobe, and a history of lung trouble extending over eleven years, was discharged, apparently cured, December 10, 1901, nearly a year after all symptoms had disappeared. He returned to his home in Washington, D. C., and about the middle of January wrote me that he had had a serious relapse, and asked to be again received as a patient. He was readmitted January 28, 1901, and examined with more than ordinary care. There were physical signs of acute bronchitis, but the most careful microscopical examination failed to reveal bacilli. His sputum was then injected into the peritoneal cavities of two guinea pigs, which were killed at the end of eight weeks and found to be in a perfectly healthy condition. This man recovered from his bronchitis in a short time, and is now doing duty as night-watchman.

The third case is that of a young man 21 years of age who was admitted August 28, 1901, in the first stage of the disease, tubercle bacilli being present in his sputum; he made rapid gain in weight; cough and expectoration ceased entirely by January 1, 1902, and for more than three months he had absolutely no symptoms, and was about to be discharged from further treatment. A few days ago on arising in the morning he coughed once, expectorating a small portion of muco-purulent matter, which on microscopical examination was found to contain tubercle bacilli in considerable numbers, well grouped. The bacilli had previously entirely disappeared from his sputum.

The fourth case, in which there was extensive involvement of both lungs and larynx, with almost entire loss of voice, patient extremely weak and much emaciated; was discharged after fifteen months' treatment, and for the past year has been employed as wagon driver in the nearby town of Capitan, N. Mex. He has entirely recovered his voice, strength, and usual weight, and remains well, so far as physical signs are concerned, and is strong and hearty.

The lessons and encouragement to be gained from these cases seem too obvious to require comment.

NECESSITY OF DISINFECTION.

By M. J. Rosenau,

Passed assistant surgeon, Marine-Hospital Service, director hygienic laboratory.

[Read at meeting of New York State Association of Railway Surgeons, New York City, November 14, 1901.]

Suppose we were at sea in a ship with a cargo of wild beasts and the tigers broke loose. If the captain called us all together and gave us a lecture upon the necessity of caging or destroying these wild beasts, explaining at great length that they were dangerous, we would get out of patience with him. It seems to me quite as useless to deliver a polemic upon the necessity of destroying dangerous microbes, and I trust I may not overtax your patience this morning in insisting upon something that seems so self-evident, especially to those who have worked with the disease-producing microbes; for well do they know the needless sorrow, the misery, the suffering, pain, and death that result from carelessness, ignorance, or willful neglect of preventive measures, such as disinfection, so well understood nowadays.

There are, however, phases of this subject that may well engage our attention for a few minutes, and I will ask your indulgence while I emphasize them in a way that may not have occurred to some of you before.

The main trouble in convincing people of the danger is due to the fact that the micro-organisms of disease are so small that they can not be seen with the naked eye. If they were as evident and ferocious looking as the tigers we just spoke of, we would all go gunning for them and rid our neighborhood of them before we could live there in peace and comfort. It is otherwise with an invisible foe, and while the people may be willing to believe in a general way that many diseases are due to microbes, it seems they can neither understand nor appreciate a danger so intangible and so mysterious in its effects.

First of all we must be careful not to magnify the danger. There are good germs as well as evil ones. In fact, we are prone to be unappreciative of their usefulness, because the black sheep among them have given the whole flock a bad reputation. We are fast acquiring an exact knowledge of the habits and the habitat of the dangerous microbes, as well as their vehicles and methods of attack. In other words, our processes of disinfection are no longer shotgun methods, greatly in excess of the actual requirements, but truly scientific methods, aimed at the very haunts where these little plants nest and breed.

It is self-evident that for practical work it is probably more important to know what and when to disinfect than how to disinfect. Therefore, let us consider this question: Is it necessary to disinfect the railroad coach, the sleeping car, the railroad station, the yard, even when no case of contagious or infectious disease has been known to have contaminated these places? There is the rub. For who can say that among the traveling public no one of them is suffering with tuberculosis, pneumonia, typhoid, scarlet fever, diphtheria, or any other of the communicable diseases?

All such diseases may exist in latent or mild form, so that they are difficult to recognize. For example, it is well known that a person may have virulent diphtheria bacilli in his mouth without having any local lesions or constitutional disturbance. In fact, there is nothing to lead either him or his associates to suspect that such is the case. That person, by using a drinking glass, or towel, or other object, that shortly afterwards is put to the lips or mouth of another who is more susceptible to this infection, may communicate a severe or fatal case of diphtheria. The disease may also be spread to others in the railroad coach or station by the coughing, or sneezing, or talking of the person having these bacilli in his mouth, for in these acts the sputum or saliva is sprayed out to some distance—several yards from the mouth—and each droplet is laden with the fresh, moist, and virulent microorganisms. These minute droplets are carried by the air currents to all portions of the railroad coach, or waiting room of the station, and contaminate any surface where they happen to land. The expectoration of such a person upon the floor, dries and floats about as a menace to the well.

Exactly the same may be said of tuberculosis. The sputum dries and contaminates its surroundings. The saliva is sprayed about in the act of coughing, sneezing, talking, and other expulsive efforts of expiration. Think how many cases of consumption there are. Think how many of them travel for health or from necessity. What railroad coach, what railroad station is not infected daily with this great white plague of modern times? Without multiplying examples, I will pause to mention that as well recognized a disease as smallpox sometimes is so mild that it is not recognized by the clinicians. It is just such cases that spread the disease from place to place and infect the railroad coach en route.

The same may be said of typhoid, scarlet fever, measles, cholera, yellow fever, plague, and the whole list of the pestilential diseases.

Now, it needs no stretch of the imagination to understand how such people—and there are plenty of them—sow the infection of disease about the railroad property. Who uses the drinking glass in a railroad coach or in the station without thinking that the person who just put it down from his lips had mucous patches of syphilis on his tongue, or diphtheria, or pneumonia, or possibly, tuberculosis? To use that glass again would be a fruitful way of inoculating oneself with the living virulent causes of these infections in their most active state.

Who uses the brush and comb but does not think perhaps they were just used upon a scalp infected with ringworm, favus, or one of the many communicable diseases of the skin?

Who uses a towel in a public place, such as the toilet room of the coach or station, without remembering how he has seen persons use one, and then carefully folding it, put it back again in its place on the rack, so that it looks for all the world like a fresh-laundered towel? We all know of cases of gonorrheal ophthalmia and like infections that have been contracted in some such way.

I could multiply these examples, but will rest satisfied with simply mentioning the soap, the seat of the water-closet, the bowl of the washstand, and almost every object used or touched by the public in the toilet rooms of either the railroad coach or the railroad station.

There are evils of construction in the modern railroad car responsible for much of the infection and the difficulty of eradicating it. With the spitting, hawking, and blowing of the nose into the washbowl (everybody washes their teeth over these bowls, for no other place is provided), it is no wonder that they frequently convey infection. It is unfortunate, as Doctor Hurty points out, that a special sink is not furnished in the toilet room of the coach for the teeth-cleaning process. The faucets of the washbowl should be arranged so that one could use running water.

Another evil of construction that may properly be mentioned in this connection is the excessive amount of molding and ornamentation, all of which holds the dust and dirt and infection, which makes cleaning and disinfection so much more difficult. Such materials as plush and velvet may look very gorgeous to the eyes that have not seen the life that swarms under the microscope. For the bacteriologist they are like red flags to a bull. Surely there are substances with a hard, smooth surface which make cheaper and cleaner and better upholstery for the railroad coach.

As far as the berth in the sleeper is concerned, who gets into one of these cubby holes without thinking of the probality of its having been used the night before by a consumptive, or case of contagious fever? And although the sheets and pillow slips may be changed, there are the blankets and all the other surfaces that have been so carefully closed up, almost hermetically, against the fresh air and sunshine during the day. Nothing is better calculated to keep the microbes alive and virulent. The danger of the sleeping coach is so evident that I deem it a waste of time to go into that subject more in detail. The necessity of its frequent disinfection must be patent.

The necessity of disinfecting the day coach is probably less evident. I have already dwelt upon the dangers of the toilet room and floors. While there is probably less danger in the seat of the day coach itself, still the danger is there, and these cars should receive a periodical disinfection in addition to the cleansing, particularly as long as they are upholstered in plush and velvet and decorated with moldings and ornamentations that hold the dust and dirt.

There is another phase of the subject that I want to call attention to, and that is the vile arrangement of the water-closet on the passenger coach. There is little doubt in my mind that typhoid fever is spread broadcast throughout the length and breadth of the land by means of the primitive and offensive open hopper. There are many cases of typhoid fever traveling in railroad trains. Some are walking cases, some are convalescent, some have the disease developing. From the nature of the disease these cases use the closet frequently, and their discharges, laden with typhoid bacilli, are dropped along the route and smear the underside of the car to be splashed and spattered in all directions. Some of these discharges may directly contaminate the water supply of towns and cities by falling into the river as the train crosses the bridge; some may do so indirectly by being washed into the water courses along which the railroad so frequently runs. Others, in the country, become the breeding and feeding places for flies, which carry the infection to the nearest farmhouse.

The necessity for disinfection of the dejecta upon the rolling stock is, I am told, a difficult mechanical problem, but it is one well worth the while of the engineering department to solve.

Disinfection nowadays does not only mean the destruction of microbes, for since we know that disease is conveyed by insects, we are compelled also to pay some attention to these pests. The railroad not only spreads disease by transporting the infection in persons and things, but by carrying insects from place to place. Mosquitoes, flies, bedbugs, and fleas are great travelers, even though they do not pay car fare. The railroad has frequently brought mosquitoes to many out of the way places where they now breed in swarms although they were unknown before the road was built.

People are waking up to the fact that the railroad is spreading these annoying and dangerous vermin, and now that great sums of money and much energy are being expended to rid localities of them, the railroads will find it necessary not to import a fresh supply and to guard against and destroy those which get upon the car.

This is an entirely new phase of the subject, and as it is only my portion to point out the necessity of disinfection, I will leave the subject as stated, without going into the methods. This I leave to the next speaker.

STATISTICS OF MARINE HOSPITALS AND RELIEF STATIONS.

STATISTICS OF MARINE HOSPITALS AND RELIEF STATIONS.

The following statistical tables are self-explanatory:

TABLE I.—COMPARATIVE TABLE OF NUMBER [illegible]

The following tabular statement will [illegible] reorganization of the Marine-Hospital Service in [illegible]

Operations of the Marine-Hospital [illegible]

Fiscal years.	[illegible]	[illegible]
Prior to reorganization:		
1868	[illegible]	[illegible]
1869	[illegible]	[illegible]
1870	[illegible]	[illegible]
After reorganization:		
1871	[illegible]	[illegible]
1872	[illegible]	[illegible]
1873	[illegible]	[illegible]
1874	[illegible]	[illegible]
1875	[illegible]	[illegible]
1876	[illegible]	[illegible]
1877	[illegible]	[illegible]
1878	[illegible]	[illegible]
1879	[illegible]	[illegible]
1880	[illegible]	[illegible]
1881		[illegible]
1882		[illegible]
1883		[illegible]
1884		[illegible]
1885		[illegible]
1886		[illegible]
1887		[illegible]
1888		[illegible]
1889		[illegible]
1890		[illegible]
1891		[illegible]
1892		[illegible]
1893		[illegible]
1894		[illegible]
1895		[illegible]
1896		[illegible]
1897		[illegible]
1898		[illegible]
1899		[illegible]
1900		[illegible]
1901		[illegible]
1902		[illegible]

TABLE II.—EXHIBIT OF OPERATIONS OF THE SERVICE DURING THE YEAR ENDED JUNE 30, 1902.

Ports.	Total number of seamen treated.	Patients in hospital July 1, 1901.	Admitted during the year.	Total treated in hospital.	Discharged.	Died.	Remaining in hospital June 30, 1902.	Number of days' relief in hospital.	Number of persons furnished office relief.	Number of times relief was furnished.	Number of persons examined physically including pilots.	Amount expended.	Tonnage tax collected.
Total	**56,310**	**788**	**12,139**	**12,927**	**11,679**	**884**	**864**	**356,769**	**43,383**	**67,628**	**8,867**	a**$999,356.77**	b**$878,351.58**
Albany, N. Y	3		3	3	2		1	64				178.60	
Alexandria, Va													27.27
Apalachicola, Fla	70		28	28	27	1		343	42	63		820.00	1,479.68
Ashland, Wis	255	5	50	55	51	2	2	1,091	200	202		1,480.50	
Ashtabula, Ohio	253	1	40	41	39	1	1	619	212	490		883.30	
Astoria, Oreg	76	1	12	13	12		1	235	63	119	59	814.45	16,346.85
Baltimore, Md	1,343	32	432	464	403	18	43	17,163	879	1,124	125	21,063.88	50,314.41
Bangor, Me	76	3	20	23	21		2	478	53	64	6	994.13	374.46
Barnstable, Mass., and subports	172								172	484		500.40	59.07
Bath, Me	22								22	73		302.67	38.04
Beaufort, N. C	94		2	2	2			22	92	144	78	446.93	
Beaufort, S. C	52								52	70		81.15	609.36
Belfast, Me													79.14
Bismarck, N. Dak	10	1	7	8	8			131	2	5		317.90	
Boothbay Harbor, Me	103	1	8	9	8		1	65	94	96	5	409.34	
Boston, Mass	2,491	40	591	631	580	13	38	19,526	1,860	2,923	308	26,409.51	65,013.36
Bridgeport, Conn	19	1	15	16	15		1	634	3	3		637.00	367.41
Bridgeton, N. J													147.36
Bristol, R. I													3.75
Brunswick, Ga	201	2	40	42	39	1	2	736	159	183		1,228.50	5,524.80
Buffalo, N. Y	2,241	16	389	405	381	7	17	5,947	1,836	2,358	33	13,135.58	
Burlington, Iowa	9		9	9	9			187				156.95	262.26
Burlington, Vt	1		1	1	1			31				(c)	
Cairo, Ill	851	8	235	243	234	1	8	5,316	608	905		10,101.79	
Cambridge, Md	50		26	26	24	1	1	313	24	33		576.42	
Castine, Me	1								1	1		58.00	20.97
Cedar Keys, Fla	301		2	2	1	1		46	299	449		479.00	
Charleston, S. C	724	6	87	93	87	1	5	1,378	631	846	65	6,025.74	6,041.91
Chattanooga, Tenn	14		5	5	5			95	9	28		342.60	
Chicago, Ill	2,795	30	500	530	493	14	23	13,158	2,265	2,931	86	25,974.30	484.80
Cincinnati, Ohio	824	12	219	231	213	4	14	5,335	593	863	11	12,633.44	
Cleveland, Ohio	1,909	34	322	356	321	9	26	11,645	1,553	2,350	34	15,280.90	231.72
Coos Bay, Oreg													93.42
Corpus Christi, Tex	11								11	31	18	358.25	
Crisfield, Md	115								115	184		300.45	
Darien, Ga	39								39	45		234.65	
Delaware Breakwater, Del	300	2	64	66	64		2	878	234	275	88	8,994.85	
Detroit, Mich	1,151	15	302	317	294	8	15	7,268	834	1,356	65	17,819.68	68.90
Dubuque, Iowa	34	3	24	27	26		1	299	7	12	17	751.27	

Duluth, Minn	289	2	40	42	38	2	2	660	347	430	30	800.91	27.12
Dutch Harbor, Alaska	80	1	12	13	8	1	4	283	67	90		2,891.49	
Eastport, Me	3								3	6		6.00	860.73
Edenton, N. C	158		6	6	6			39	152	231		809.00	
Edgartown, Mass	5								5	12		15.25	302.64
Elizabeth City, N. C	48								48	76	7	250.00	
Ellsworth, Me	13								13	51	11	303.00	139.20
Erie, Pa	197		52	52	52			895	145	199		974.10	
Escanaba, Mich	137		21	21	21			419	116	116		726.93	
Eureka, Cal	66		14	14	13	1		211	52	57	14	616.70	609.15
Evansville, Ind	1,291	13	170	183	170	3	10	4,454	1,108	1,794	11	10,280.42	
Fall River, Mass													78.17
Fernandina, Fla	125		18	18	15	1	2	273	107	134		583.00	3,028.61
Fredericksburg, Va	37	1	3	4	4			68	33	57		159.56	
Fort Stanton, N. Mex	212	74	138	212	79	28	105	35,059				54,672.76	
Gallipolis, Ohio	212	1	98	99	98	1		1,651	113	260	16	2,127.73	
Galveston, Tex	766	23	164	187	174	2	11	4,377	579	829	155	7,876.62	33,580.68
Georgetown, S. C	269	1	78	79	76	3		739	190	289	5	1,684.00	
Gloucester, Mass	342		21	21	15	3	3	579	321	470	39	1,304.07	1,049.40
Government Hospital for the Insane, Washington, D. C	34	30	4	34	1	2	31	11,372				7,320.57	
Grand Haven, Mich	28	1	6	7	7			96	21	36	98	446.35	
Great Falls, Mont													34.35
Greenbay, Wis	90		10	10	10			170	80	98		559.01	
Hartford, Conn	10	1	9	10	9		1	355				397.50	
Honolulu, Hawaii	589	15	149	164	150	6	8	4,657	425	717	16	9,934.59	21,435.45
Hoquiam, Wash	24		7	7	7			94	17	27		733.47	
Houghton, Mich	16								16	21		180.01	
Jacksonville, Fla	302	3	95	98	96	2		1,629	204	214	26	2,354.58	566.13
Juneau, Alaska	97		25	25	25			253	72	287	7	1,776.00	
Key West, Fla	2,105	6	140	146	121	13	12	5,496	1,959	3,333	31	10,166.07	1,684.07
La Crosse, Wis	123		26	26	21	1	4	269	97	166	1	846.02	
Little Rock, Ark	12		3	3	3			40	9	14		280.08	
Los Angeles, Cal	225	5	94	99	97	1	1	1,946	126	580		2,954.26	769.47
Louisville, Ky	791	10	258	268	250	8	10	4,836	523	832	27	12,145.55	
Ludington, Mich	45		15	15	15			168	30	53		340.80	
Machias, Me	67	1	10	11	7	2	2	371	56	90		687.29	432.39
Manila, P. I											52		
Manitowoc, Wis	81	1	23	24	21	2	1	389	57	84		824.75	
Manistee, Mich	116		23	23	20	1	2	328	93	129	26	625.49	
Marquette, Mich	65	1	11	12	10	2		220	53	63	18	550.30	
Marblehead, Mass													41.40
Marshfield, Oreg	92		27	27	27			373	65	125	19	867.60	
Memphis, Tenn	1,825	7	401	408	386	13	9	5,666	1,417	1,750	7	11,789.95	
Menominee, Mich	33	2	4	6	6			171	27	35		493.60	
Milwaukee, Wis	982	5	159	164	152	2	10	2,901	818	1,256	77	6,162.15	
Mobile, Ala	1,050	11	243	254	217	11	26	7,057	796	1,659	128	14,221.21	15,826.98
Nashville, Tenn	90		6	6	6			76	84	191	8	457.23	
Natchez, Miss	7		4	4	4			53	3	4		594.16	
Newark, N. J													472.92

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a Miscellaneous expenditures, $193,098.36.

b Actual amount covered into Treasury within fiscal year 1902, $858,190.89.

c Amount expended outstanding.

TABLE II.—EXHIBIT OF OPERATIONS OF THE SERVICE DURING THE YEAR ENDED JUNE 30, 1902—Continued.

Ports.	Total number of seamen treated.	Patients in hospital July 1, 1901.	Admitted during the year.	Total treated in hospital.	Discharged.	Died.	Remaining in hospital June 30, 1902.	Number of days' relief in hospital.	Number of persons furnished office relief.	Number of times relief was furnished.	Number of persons examined physically including pilots.	Amount expended.	Tonnage tax collected.
New Bedford, Mass	72	1	4	5	5	....	....	118	67	139	....	$509.70	$118.59
Newbern, N. C	357	1	32	33	33	....	....	322	324	659	....	905.08	3.12
New Haven, Conn	62	2	35	37	33	1	3	600	25	28	28	1,110.00	175.62
New London, Conn	74	1	12	13	12	1	....	249	61	61	....	1,093.55	42.63
New Orleans, La	2,028	18	388	406	365	16	25	10,838	1,622	2,177	124	25,486.88	75,917.91
Newport, Ark	100	1	10	11	10	1	....	128	89	155	....	525.45	....
Newport, R. I	89	1	35	36	26	3	7	666	53	57	....	1,378.05	37.62
Newport, Vt	....	....	....	....	....	....	....	....	....	....	....	....	57.78
Newport News, Va	40	....	....	....	....	....	....	....	40	41	....	218.50	14,278.29
New York, N. Y	4,677	86	1,138	1,224	1,071	44	109	40,821	3,453	5,209	549	44,482.43	305,497.56
New York, N. Y. (Immigration Service)	....	....	....	....	....	....	....	....	....	....	....	27,551.79	....
New York, N. Y. (purveying division)	....	....	....	....	....	....	....	....	....	....	....	126,998.21	....
Norfolk, Va	1,958	11	334	345	322	11	12	4,521	1,613	2,044	157	9,164.58	5,548.68
Ogdensburg, N. Y	69	1	6	7	5	1	1	147	62	217	....	522.58	878.07
Oswego, N. Y	60	....	10	10	10	....	....	235	50	82	....	806.95	556.20
Paducah, Ky	169	....	....	....	....	....	....	....	169	547	....	587.25	....
Pensacola, Fla	120	5	115	120	116	1	3	2,013	....	....	....	3,201.56	19,709.07
Perth Amboy, N. J	....	....	....	....	....	....	....	....	....	....	....	....	1,299.69
Philadelphia, Pa	1,393	17	358	370	342	9	19	7,984	1,023	1,351	257	17,816.40	72,030.81
Philippine Islands	....	....	....	....	....	....	....	....	....	....	....	....	582.36
Pittsburg, Pa	1,627	14	378	392	376	10	6	8,295	1,235	1,648	22	11,560.56	....
Plattsburg, N. Y	....	....	....	....	....	....	....	....	....	....	....	....	3,497.91
Plymouth, Mass	....	....	....	....	....	....	....	....	....	....	....	....	17.16
Ponce, P. R	36	....	4	4	4	....	....	45	32	41	....	45.00	....
Port Huron, Mich	138	1	4	5	5	....	....	78	133	266	....	378.00	....
Portland, Me	1,051	20	216	236	208	4	24	8,699	815	1,155	87	12,500.59	12,806.74
Portland, Oreg	405	4	80	84	74	4	6	2,201	321	597	....	6,219.36	....
Portsmouth, N. H	81	....	12	12	12	....	....	195	19	23	5	896.40	77.16
Port Tampa, Fla	90	2	54	56	53	....	3	1,116	34	131	....	1,508.00	....
Port Townsend, Wash	616	34	394	428	388	10	30	13,629	168	293	15	15,506.48	31,425.66
Porto Rico, W. I	....	....	....	....	....	....	....	....	....	....	....	....	12,890.69
Providence, R. I	454	....	65	65	58	7	....	1,658	389	907	....	2,581.85	454.80
Richmond, Va	50	1	12	13	12	1	....	183	37	37	....	484.77	22.47
Rockland, Me	202	....	1	1	1	....	....	5	201	500	17	570.40	....
Rochester, N. Y	....	....	....	....	....	....	....	....	....	....	....	....	814.88
Rome, Ga	....	....	....	....	....	....	....	....	....	....	....	....	....
Sag Harbor, N. Y	6	....	....	....	....	....	....	....	6	11	....	11.00	56.28
Saginaw, Mich	156	....	41	41	39	....	2	656	115	170	18	823.06	....
Salem, Mass	9	....	....	....	....	....	....	....	9	9	....	12.00	240.08
San Diego, Cal	43	....	14	14	14	....	....	327	29	52	7	5,466.88	1,687.81

Sandusky, Ohio	57	1	5	6	6			45	51	64	16	248.47	
San Francisco, Cal	8,355	64	779	843	761	25	57	26,139	2,512	5,533	371	29,788.52	36,849.80
San Juan, P. R	105		42	42	38		4	695	63	93	8	725.18	
St. Louis, Mo	1,619	16	365	381	353	11	17	8,456	1,238	2,084	82	17,114.51	
St. Marys, Ga													39.51
St. Paul, Minn	30		13	13	12		1	211	17	49		467.71	
Sault Ste. Marie, Mich	351	10	152	162	141	5	16	2,307	189	214		3,070.32	
Savannah, Ga	1,132	13	241	254	237	5	12	5,615	878	1,104	65	8,221.36	12,024.25
Seattle, Wash	1,318	2	97	99	85	5	9	2,343	1,214	1,913	195	5,698.73	
Shieldsboro, Miss													8,842.41
Shreveport, La	31		6	6	6			72	25	47		717.90	
Sitka, Alaska	4		4	4	3		1	50				150.00	2,843.87
Solomons, Md	367		12	12	11	1		138	355	405		583.89	
Stonington, Conn													42.90
Sturgeon Bay, Wis	47		1	1	1			16	46	79	49	348.80	
Superior, Wis	274	4	41	45	42	1	2	745	229	400		1,058.10	
Tacoma, Wash	138	3	37	40	38		2	526	98	126	13	1,074.55	
Tampa, Fla													4,088.67
Tappahannock, Va	298	2	194	196	192	1	3	1,730	102	120		2,798.70	
Toledo, Ohio	343	7	109	116	109	1	6	1,949	227	604		1,872.50	17.97
Vicksburg, Miss	56	1	40	41	38	1	2	864	15	22		2,031.84	
Vineyard Haven, Mass	215	5	79	84	69	5	10	3,255	131	136	15	9,534.69	
Waldoboro, Me													238.17
Washington, D. C	153		31	31	25	2	4	668	122	160		34,149.97	178.64
Washington, D. C. (laboratory)												14,365.76	
Wheeling, W. Va	65	1	14	15	15			219	50	79	2	543.65	
Wilmington, Del													7,375.77
Wilmington, N. C	264	9	78	87	75	2	10	2,691	177	200	23	9,190.19	8,231.72
Wiscasset, Me													261.72
Astoria Quarantine												(a)	
Cape Charles Quarantine	12		7	7	7			237	5	7			
Cape Fear Quarantine											20		
Delaware Breakwater Quarantine													
Gulf Quarantine	15		12	12	10	2		140	3	8			
Port Townsend Quarantine	8		3	3	3			52					
Reedy Island Quarantine	1		1	1	1			17					
San Diego Quarantine	12		3	3	3			35	9	50			
San Francisco Quarantine	2		2	2	2			69					
Savannah Quarantine	3	1		1	1			10	2	4			
South Atlantic Quarantine	4		4	4	4			50					

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[a] Expenditures for quarantine stations appear elsewhere in financial statement.

TABLE III.—SUMMARY OF PHYSICAL EXAMINATIONS OF SEAMEN MADE BY OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, YEAR ENDED JUNE 30, 1902.

Summary of examinations and causes of rejection.	Total.	Pilots.	Revenue-Cutter Service.	Life-Saving Service.	Marine-Hospital Service.	Coast and Geodetic Survey Service.	Light-House Service.	Naval colliers.	Merchant marine.	Foreign seamen.
Summary of examinations:										
Total number examined	3,867	1,670	788	1,044	21	9	18	16	276	25
Number passed	3,535	1,585	643	987	20	8	18	14	243	17
Number rejected	332	85	145	57	1	1	0	2	33	8
Causes of rejection:										
Abscess of neck	1		1							
Albuminuria	5		5							
Bronchitis, chronic	9		4	2					3	
Burn of foot	1									1
Calculi in gall-bladder	1			1						
Chanceroids	3		2	1						
Chancre of penis	3		2	1						
Condylomata of penis	1		1							
Color blindness	90	69	18	3						
Conjunctivitis	1		1							
Curvature of spine	1			1						
Deafness	7		7							
Debility	10		4	4					2	
Defective vision	20	15		5						
Defective teeth	1								1	
Deformity of hand	1		1							
Diseases of heart—										
Fatty degeneration	4		1	2				1		
Hypertrophy	5		3	1						1
Mitral insufficiency	2		2							
Mitral murmur	2		2							
Valvular	12		5	3	1				3	
Enlarged testicle	1		1							
Enlarged tonsils	3		1						2	
Gonorrhœa	4		2	1				1		
Hæmorrhoids	19		15	3					1	
Hernia—										
Inguinal	7		3	1					2	1
Oblique	10		5	3					1	1
Hydrocele	7		4						3	
Hypertrophy of tonsils	2		1						1	
Indigestion	5		3						2	
Inflammation of the eye	1					1				
Inflammation of the stomach	2		1							1
Insufficient chest expansion	1		1							
Insufficient stature	2			2						
Leprosy	1	1								
Locomotor ataxia	4			4						
Loss of testicle	1		1							
Malarial fever	2		1							1
Malformation of soft palate	1			1						
Multiple neuritis	6		5							1
Nasal catarrh	2		2							
Œdema of connective tissue	1		1							
Opacity of cornea	3		2	1						
Papilloma, squamous	1			1						
Persistent headache	1		1							
Right great toe missing	1		1							
Roughened breathing	1			1						
Rheumatism	14		10	3					1	
Syphilis—										
Primary	2		2							
Secondary	11		9						2	
Tubercle of elbow joint	1		1							
Tubercle of lungs	2			1						1
Ulcer of penis	5			1					4	
Varicose veins of leg	12		7	3					2	
Varicocele	14		5	6					3	
Wound of head	1			1						
Wound of thumb	1		1							

TABLE IV.—STATEMENT, BY DISTRICTS, OF THE NUMBER OF PATIENTS TREATED DURING THE YEAR ENDED JUNE 30, 1902.

Districts.	Total cases.	Patients in hospital July 1, 1901.	Admitted during the year.	Total number treated in hospital.	Discharged.	Died.	Patients in hospital June 30, 1902.	Number of days relief in hospital.	Number of seamen furnished office relief.
Total	**56,310**	788	**12,139**	**12,927**	**11,679**	**384**	**864**	**356,769**	**43,383**
North Atlantic	5,419	72	1,063	1,135	1,011	37	87	35,646	4,284
Middle Atlantic	6,544	110	1,629	1,739	1,548	55	136	51,585	4,805
South Atlantic	8,210	112	1,725	1,837	1,660	52	125	49,600	6,373
The Gulf	6,713	65	1,186	1,251	1,122	45	84	32,098	5,462
The Ohio	5,083	51	1,148	1,199	1,133	26	40	24,961	3,884
The Mississippi	4,676	37	1,137	1,174	1,104	28	42	21,620	3,502
The Great Lakes	12,278	137	2,336	2,473	2,289	58	126	52,323	9,805
The Pacific	7,335	203	1,883	2,086	1,781	81	224	88,326	5,249
The quarantine stations	52	1	32	33	31	2	0	610	19

TABLE V.—RATIO OF PATIENTS TREATED IN HOSPITAL IN EACH DISTRICT.

Districts.	Per cent of total number of patients.	Districts.	Per cent of total number of patients.
North Atlantic	20.94	The Mississippi	25.10
Middle Atlantic	26.57	The Great Lakes	20.14
South Atlantic	22.37	The Pacific	28.43
The Gulf	18.63	The quarantine stations	63.46
The Ohio	23.58		

TABLE VI.—AVERAGE DURATION OF TREATMENT IN HOSPITAL IN EACH DISTRICT.

Districts.	Average number of days relief furnished to each patient.	Districts.	Average number of days relief furnished to each patient.
North Atlantic	31.40	The Mississippi	18.41
Middle Atlantic	29.66	The Great Lakes	21.15
South Atlantic	27.00	The Pacific	42.34
The Gulf	25.65	The quarantine stations	18.48
The Ohio	20.81		

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Total of all cases	788	**12,139**	**7,339**	**4,059**	**281**	**384**	**864**	**43,383**	**56,310**
GENERAL DISEASES	331	4,945	2,857	1,773	102	169	375	17,832	23,108
LOCAL DISEASES	344	5,054	3,018	1,698	147	186	349	20,740	26,138
GENERAL INJURIES	4	164	120	84	......	5	9	285	453
LOCAL INJURIES	109	1,976	1,344	554	32	21	131	4,526	6,611

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

NORTH ATLANTIC.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
TOTAL CASES	**72**	**1,063**	**590**	**390**	**31**	**37**	**87**	**4,284**	**5,419**
General Diseases	**80**	**397**	**284**	**139**	**9**	**14**	**31**	**2,015**	**2,442**
Smallpox		3	2			1		6	9
Cowpox		4	1	3				351	355
Chickenpox								1	1
Measles	1	7	8						8
Influenza	1	10	9	2				54	65
Mumps		7	7					9	16
Diphtheria		2	2					1	3
Simple continued fever		2	2					2	4
Enteric fever	7	40	36			3	8	6	53
Epidemic diarrhea								2	2
Dysentery		4	4					2	6
Malarial fever:									
Intermittent		55	43	9			3	91	146
Remittent		4	3				1	4	8
Erysipelas		4	4					1	5
Pyæmia								1	1
Tubercle	4	31		21	5	7	2	17	52
Syphilis:									
Primary		2		1			1	42	44
Secondary	1	48	1	45	1	1	1	382	431
Gonorrhea	8	61	45	20			4	589	658
Diseases dependent on animal parasites:									
Tænia solium								5	5
Ascaris lumbricoides								1	1
Phthirius inguinalis								3	3
Ascaris scabiei								6	6
Sarcoptes scabiei		3	3					12	15
Diseases dependent on vegetable parasites:									
Achorion schönleinii								2	2
Trichophyton tonsurans		1					1	1	2
Microsporon furfur								1	1
Ringworm		1	1					2	3
Effects of animal poisons—Decayed and poisonous food								2	2
Effects of vegetable poisons:									
Opium								1	1
Strychnine		1	1						1
Rhus		1	1					5	6
Copaiba		1	1					1	2
Effects of inorganic poisons—Arsenic		1	1						1
Effects of the presence of foreign bodies		1	1					1	2
Effects of cold		1	1						1
Scurvy								1	1
Alcoholism		10	9		1			19	29
Rheumatic fever	1	13	9	3			2	11	25
Rheumatism	5	64	31	30	2		6	337	406
Cyst:									
Mucous								5	5
Sebaceous								2	2
Bursal		1					1		1
New growth, nonmalignant:									
Lipoma		2	2					4	6
Fibroma								1	1
Chondroma		1	1						1
Papilloma		2	1	1				3	5
Condylomata								2	2
New growth, malignant		1					1		1
Carcinoma	1	1				2		1	3
Epithelioma		1	1					1	2
Squamous carcinoma								1	1
Anæmia								1	1
Diabetes mellitus		1		1				1	2
Diabetes insipidus								1	1
Congenital malformations	1		1						1
Debility		5	2	3				20	25

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

NORTH ATLANTIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases	29	475	228	195	19	20	42	1,737	2,241
DISEASES OF THE NERVOUS SYSTEM	8	27	1	15	4	4	11	75	110
Of the nerves—									
Neuritis		3		3				2	5
Of the spinal cord and membranes—Membranes—									
Inflammation—Of dura mater								1	1
Of the spinal cord and membranes—Cord—									
Degeneration—									
Of lateral columns	1					1			1
Of posterior columns	2	3		3			2	3	8
Of the brain and its membranes—Membranes—									
Hemorrhage	1						1		1
Of the brain and its membranes—Brain—									
Inflammation		1				1			1
Softening								5	5
Hemorrhage		1				1			1
Hyperæmia		1		1				1	2
Functional nervous disorders with other diseases of undetermined nature—									
Apoplexy		2		1		1			2
Paralysis		1		1					1
Paraplegia								1	1
Hemiplegia	4	5		2	2		5	1	10
Local paralysis		1					1	1	2
Spasm								1	1
Torticollis								1	1
Vertigo								3	3
Headache		1		1				15	16
Neuralgia		2	1				1	25	27
Hysteria								1	1
Nervous weakness		1		1				14	15
Mental diseases—									
Melancholia		2			1		1		2
Dementia		2		1	1				2
Mental stupor		1		1					1
DISEASES OF THE EYE		11	5	5			1	53	64
Conjunctivitis		2	1	1				34	36
Keratitis		1		1				7	8
Iritis		8	4	3			1	5	13
Blepharitis marginalis								1	1
Sty								1	1
Abscess of eyelid								4	4
Œdema feyelia								1	1
DISEASES OF THE EAR		1		1				39	40
Inflammation of the external meatus—Acute		1		1				11	12
Accumulation in external meatus of wax or epidermis								12	12
Inflammation of the middle ear—									
Nonsuppurative								12	12
Suppurative								2	2
Deafness								2	2
DISEASES OF THE NOSE								14	14
Inflammation of soft parts								14	14
Diseases of septum		1		1				3	4
Hæmatoma								1	1
Epistaxis								2	2
Inflammation of the naso-pharynx		1		1					1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

NORTH ATLANTIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE CIRCULATORY SYSTEM	2	24	3	14	2	3	4	45	71
Valvular disease—									
Aortic		6		4		1	1	1	7
Mitral	1	9		5	1	2	2	11	21
Mitral and aortic								2	2
Hypertrophy of heart		1		1					1
Dilatation of heart		1					1		1
Angina pectoris								2	2
Disordered action of the heart—									
Abnormal slowness								1	1
Irregularity								12	12
Aneurism of arteries	1			1					1
Obstruction of arteries—Embolism								1	1
Phlebitis								1	1
Varix		7	3	3	1			14	21
DISEASES OF THE RESPIRATORY SYSTEM	1	50	21	22		4	4	268	319
Hay fever								1	1
Inflammation of mucous membrane of larynx								1	1
Catarrhal, acute		3	2	1				8	11
Catarrhal, chronic								1	1
Membranous		1	1						1
Bronchitis—									
Catarrhal, acute		15	11	3			1	193	208
Catarrhal, chronic		6	2	3			1	28	34
Spasmodic asthma		9		8			1	10	19
Hæmoptysis								2	2
Pneumonia		8	3	2		3		1	9
Phthisis—									
Acute								17	17
Chronic		1		1				1	2
Tubercular	1	1		1		1		4	6
Pleurisy—Acute		6	2	3			1	1	7
DISEASES OF THE DIGESTIVE SYSTEM	5	90	63	25	3	3	1	570	665
Ulceration of the lips								1	1
Fissure of the lips								1	1
Inflammation of the mouth								2	2
Ulceration of the mouth								2	2
Caries of dentine and cementum								5	5
Necrosis of cementum								1	1
Inflammation of the dental periosteum								4	4
Abscess of dental periosteum		3	1	2				2	5
Inflammation of gums and alveoli								1	1
Suppuration of alveoli								1	1
Ulceration of gums and alveoli								1	1
Toothache								5	5
Sore throat		2	2					13	15
Inflammation of the tonsils—									
Follicular		11	7	4				24	35
Suppuration		3	3					10	13
Hypertrophy of tonsils		1	1						1
Inflammation of the pharynx—									
Catarrhal								21	21
Follicular		2	2					5	7
Post-pharyngeal abscess		1	1					2	3
Inflammation of the stomach—Catarrhal	1	4	3	2				15	20
Hæmorrhage of the stomach								1	1
Hyperæmia, stomach								2	2
Indigestion		5	3	1	1			206	211
Spasm								1	1
Vomiting								1	1
Inflammation of the intestines—									
Enteritis								1	1
Typhlitis		6	4			2		2	8
Catarrhal	1	7	6	2				16	24
Intestinal hæmorrhage		1	1						1
Fæcel accumulation								1	1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

NORTH ATLANTIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
DISEASES OF THE DIGESTIVE SYSTEM—Con.									
Hernia	......	10	4	4	1	....	1	60	70
Obstruction of the intestines	......	1	1	......	......	....	......	......	1
Intestinal dyspepsia	......	......	......	......	......	....	......	1	1
Constipation	......	3	1	2	......	....	......	55	58
Colic	......	......	......	......	......	....	......	2	2
Diarrhœa	......	7	6	1	......	....	......	43	50
Periproctitis—Abscess	......	4	4	......	......	....	......	2	6
Ulceration of rectum	......	2	......	2	......	....	......	1	3
Fissure of the anus	1	......	1	......	......	....	......	3	4
Fistula in ano	1	3	3	1	......	....	......	5	9
Piles—									
Internal	......	5	3	1	1	....	......	8	13
External	1	5	4	2	......	....	......	16	22
Mixed	......	1	1	......	......	....	......	......	1
Pruritus ani	......	......	......	......	......	....	......	3	3
Inflammation of the liver	......	......	......	......	......	....	......	3	3
Chronic	......	1	......	......	......	1	......	......	1
Hyperæmia of the liver	......	......	......	......	......	....	......	15	15
Hypertrophy of the liver	......	......	......	......	......	....	......	1	1
Jaundice	......	......	......	......	......	....	......	2	2
Inflammation of hepatic ducts and gall-bladder	......	1	1	......	......	....	......	1	2
Biliary colic	......	1	......	1	......	....	......	......	1
Dropsy	......	......	......	......	......	....	......	2	2
DISEASES OF THE LYMPHATIC SYSTEM	1	54	26	22	3	....	4	43	98
Inflammation of lymph glands	......	47	23	21	3	....	......	42	89
Suppuration	1	7	3	1	......	....	4	1	9
DISEASES OF THE URINARY SYSTEM	......	30	4	16	3	4	3	63	93
Acute nephritis	......	1	......	1	......	....	......	1	2
Bright's disease	......	7	......	3	2	2	......	3	10
Chronic nephritis	......	8	......	5	1	....	2	6	14
Cranular kidney	......	3	......	2	......	....	1	......	3
Congestion of kidney	......	1	......	1	......	....	......	2	3
Hæmaturia	......	1	......	......	......	1	......	1	2
Phosphaturia	......	......	......	......	......	....	......	2	2
Inflammation of bladder—									
Acute	......	6	3	3	......	....	......	30	36
Subacute	......	......	......	......	......	....	......	3	3
Chronic	......	2	1	......	......	1	......	6	8
Irritability of bladder	......	......	......	......	......	....	......	4	4
Retention of urine	......	......	......	......	......	....	......	2	2
Incontinence of urine	......	1	......	1	......	....	......	3	4
DISEASES OF THE GENERATIVE SYSTEM	4	87	47	38	1	....	5	224	315
Urethritis	......	......	......	......	......	....	......	3	3
Gleet	......	......	......	......	......	....	......	7	7
Stricture of urethra—Organic	......	15	3	11	......	....	1	38	53
Inflammation of the prostate—Acute	......	......	......	......	......	....	......	1	1
Prostatarrhœa	......	......	......	......	......	....	......	1	1
Hypertrophy of the prostate	......	1	......	......	1	....	......	1	2
Phimosis	......	3	2	1	......	....	......	6	9
Paraphimosis	......	3	2	1	......	....	......	1	4
Inflammation of the glans of penis	......	1	1	......	......	....	......	9	10
Ulcer of penis	......	8	3	3	......	....	2	18	26
Œdema of penis	......	1	......	1	......	....	......	1	2
Soft chancre	3	29	15	15	......	....	2	93	125
Gangrene penis	......	1	1	......	......	....	......	1	2
Inflammation of the spermatic cord	......	......	......	......	......	....	......	1	1
Varicocele	......	1	1	......	......	....	......	7	8
Hydrocele of tunica vaginalis	......	3	2	1	......	....	......	5	8
Acute orchitis	1	15	12	4	......	....	......	19	35
Chronic orchitis	......	2	2	......	......	....	......	2	4
Epididymitis	......	3	3	......	......	....	......	2	5
Abscess of testicle	......	1	......	1	......	....	......	......	1
Atrophy of testicle	......	......	......	......	......	....	......	1	1
Spermatorrhœa	......	......	......	......	......	....	......	7	7

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

NORTH ATLANTIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE ORGANS OF LOCOMOTION.	2	30	11	15	3		3	94	126
Inflammation of the bones—									
Osteitis		2	1	1				2	4
Periostitis	2	3	2	2			1	2	7
Necrosis		9	1	5	1		2	5	14
Inflammation of joints—									
Acute synovitis		1		1				8	9
Chronic synovitis		2	1	1				3	5
Ankylosis		4	1	2	1			1	5
Posterior curvature of spine, angular		1		1				1	2
Lateral curvature of spine		1		1				1	2
Inflammation of muscles								1	1
Myalgia		2	2					56	58
Lumbago		1			1			3	4
Contraction of tendons								1	1
Inflammation of sheaths of tendons		1	1					1	2
Inflammation of bursæ—Acute		1	1					4	5
Bunion								1	1
Bursal cyst		1	1					4	5
Flat foot		1		1					1
DISEASES OF THE CONNECTIVE TISSUE	2	23	21	4				68	93
Inflammation	2	7	8	1				31	40
Abscess		16	13	3				35	51
Œdema								2	2
DISEASES OF THE SKIN	4	47	26	17		2	6	178	229
Erythema								1	1
Urticaria								4	4
Prickly heat								1	1
Eczema		8	4	4				35	43
Lichen								2	2
Psoriasis		1		1				5	6
Herpes								10	10
Zona		2	2					5	7
Pemphigus								1	1
Dermatitis herpetiformis								2	2
Acne								2	2
Sycosis		1					1	1	2
Chilblain								1	1
Ulcer	3	25	13	10		1	4	21	49
Boil	1	4	1	2		1	1	64	69
Carbuncle		2	2					4	6
Whitlow		2	2					14	16
Onychia		1	1						1
Corn								1	1
Wen		1	1					2	3
Pruritus								1	1
Lupus								1	1
Injuries	13	191	128	56	3	3	14	532	736
GENERAL INJURIES		8	5	2			1	27	35
Effects of heat—Burns and scalds		5	4	1				24	29
Effects of cold								2	2
Effects of chemical irritants and corrosives								1	1
Multiple injury		3	1	1			1		3
LOCAL INJURIES	13	183	123	54	3	3	13	505	701
Strain of muscles		2	2					9	11
Abrasion of skin								1	1
Burn or scald of skin		1		1					1
Frostbite		11	9	2				9	20
Effects on the skin of irritants or corrosives								1	1
Burn or scald of mucous membrane		2	1				1		2
Contusion of scalp		1	1						1
Wound of scalp		3	2	1				15	18
With injury to the aponeurosis	1	1	1	1				1	3

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

NORTH ATLANTIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
LOCAL INJURIES—Continued.									
Fracture of the vault of skull	......	1	......	......	......	1	......	....	1
Contusion of brain	1	......	1	......	......	....	......	....	1
Contusion of face	......	1	1	......	......	....	......	7	8
Wound of face and mouth	......	7	7	......	......	....	......	27	34
Foreign bodies in the nose, antrum, or other cavities	......	1	......	1	......	....	......	....	1
Fracture of facial bones	......	3	......	1	1	....	1	....	3
Dislocation of lower jaw	......	1	1	......	......	....	......	....	1
Contusion of eyelid	......	......	......	......	......	....	......	4	4
Wound of eyelid	......	......	......	......	......	....	......	1	1
Contusion of eyeball	......	1	......	1	......	....	......	....	1
Foreign bodies in the conjunctiva or cornea	......	......	......	......	......	....	......	4	4
Foreign body in eyeball	......	......	......	......	......	....	......	4	4
Wound of neck	......	......	......	......	......	....	......	1	1
Contusion of chest	......	8	5	2	......	....	1	15	23
Fracture of ribs	......	6	1	5	......	....	......	9	15
Contusion of back	1	15	14	2	......	....	......	13	29
Sprain of back	1	1	2	......	......	....	......	8	10
Wound of back	......	......	......	......	......	....	......	1	1
Wound of parietes of abdomen	......	2	1	1	......	....	......	....	2
Contusion of the pelvis	......	1	1	......	......	....	......	....	1
Wound of the male urethra, perinæum, scrotum, testis, or penis	......	1	1	......	......	....	......	1	2
Rupture of urethra	......	1	......	1	......	....	......	....	1
Contusion of upper extremities	1	7	3	3	......	1	1	37	45
Sprain of shoulder	......	1	1	......	......	....	......	8	9
Sprain of elbow	......	......	......	......	......	....	......	4	4
Sprain of wrist	......	1	......	1	......	....	......	10	11
Sprain of hand	......	......	......	......	......	....	......	3	3
Wound of upper extremities	......	32	25	5	1	....	1	201	233
Fracture of clavicle	......	2	1	1	......	....	......	3	5
Fracture of scapula	......	......	......	......	......	....	......	1	1
Fracture of humerus	......	4	3	1	......	....	......	4	8
Fracture of bones of forearm—									
Radius	......	......	......	......	......	....	......	3	3
Ulna	......	2	1	1	......	....	......	....	2
Both bones	......	2	2	......	......	....	......	3	5
Fracture of carpus, metacarpus, or phalanges	......	2	1	......	......	....	1	3	5
Dislocation of humerus	2	1	3	......	......	....	......	6	9
Dislocation of radius and ulna	......	1	1	......	......	....	......	1	2
Contusion of lower extremities	1	20	11	7	......	....	3	23	44
Sprain of hip	......	......	......	......	......	....	......	1	1
Sprain of knee	......	2	......	2	......	....	......	7	9
Sprain of ankle	......	7	5	2	......	....	......	16	23
Wound of lower extremities	......	12	8	3	......	....	1	34	46
Wound of joint, lower extremities	......	......	......	......	......	....	......	1	1
Fracture of femur	......	2	1	......	......	....	1	....	2
Fracture of patella	1	2	1	1	......	....	1	....	3
Fracture of tibia	1	3	2	2	......	....	......	3	7
Fracture of fibula	1	......	1	......	......	....	......	1	2
Fracture of tibia and fibula	2	7	2	6	......	....	1	1	10
Dislocation of femur	......	2	......	......	1	1	......	....	2

MIDDLE ATLANTIC.

Diseases.	Remaining under treatment from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
TOTAL CASES	110	1,629	940	558	50	55	136	4,805	6,544
General Diseases	49	714	385	265	15	35	63	1,854	2,617
Smallpox	......	3	1	1	1	....	......	2	5
Cowpox	......	......	......	......	......	....	......	7	7
Measles	......	......	......	......	......	....	......	3	3
Scarlet fever	......	2	1	......	1	....	......	....	2
Dengue	......	1	1	......	......	....	......	....	1
Influenza	......	9	9	......	......	....	......	8	17

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

MIDDLE ATLANTIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
Whooping cough	......	1	......	1	......	...	......	....	1
Mumps	......	7	5	2	......	...	......	2	9
Diphtheria	......	1	1	......	......	...	......	1	2
Simple continued fever	......	1	1	......	......	...	......	....	1
Enteric fever	......	56	40	1	1	4	10	2	58
Dysentery	......	10	8	2	......	...	......	10	20
Beriberi	1	......	......	1	......	...	......	....	1
Malarial fever—									
Intermittent	1	151	141	8	......	2	1	233	385
Remittent	......	43	35	2	......	3	3	6	49
Erysipelas	......	5	5	......	......	...	......	....	5
Tubercle	20	102	2	72	6	22	20	59	181
Leprosy	1	......	......	1	......	...	......	....	1
Syphilis—									
Primary	1	3	......	4	......	...	......	12	16
Secondary	5	98	1	91	1	1	9	588	691
Gonorrhea	11	75	47	33	......	...	6	485	571
Diseases dependent on animal parasites—									
Bothriocephalus latus	......	......	......	......	......	...	......	1	1
Tænia solium	......	1	1	......	......	...	......	2	3
Tænia saginata	......	1	1	......	......	...	......	....	1
Filaria sanghominis	......	1	......	1	......	...	......	....	1
Strongylus duodenalis	......	1	1	......	......	...	......	....	1
Pediculis vestimenti	......	......	......	......	......	...	......	34	34
Pediculis pubis	......	......	......	......	......	...	......	1	1
Sarcoptes scabiei	......	......	......	......	......	...	......	10	10
Diseases dependent on vegetable parasites—									
Trichophyton tonsurans	......	......	......	......	......	...	......	19	19
Microsporon furfur	......	......	......	......	......	...	......	1	1
Ringworm	......	......	......	......	......	...	......	3	3
Effects of vegetable poisons—									
Tobacco	......	......	......	......	......	...	......	1	1
Rhus	......	1	......	1	......	...	......	....	1
Effects of the presence of foreign bodies	......	......	......	......	......	...	......	4	4
Effects of mechanical injuries	......	3	......	2	......	...	1	3	6
Effects of heat	......	......	......	......	......	...	......	2	2
Scurvy	......	1	1	......	......	...	......	....	1
Alcholism	......	25	20	4	1	...	......	24	49
Rheumatic fever	1	33	20	10	......	...	4	14	48
Rheumatism	7	56	32	23	1	1	6	255	318
Gout	......	2	......	1	......	...	1	....	2
Osteoarthritis	......	1	1	......	......	...	......	....	1
Cyst—									
Mucous	......	......	......	......	......	...	......	1	1
Sebaceous	......	2	2	......	......	...	......	5	7
Fibrous	......	1	......	......	1	...	......	....	1
New growth, nonmalignant—									
Keloid	......	......	......	......	......	...	......	1	1
Lymphadenoma	......	......	......	......	......	...	......	27	27
Papilloma	1	4	4	......	1	...	......	....	5
Pterygium	......	......	......	......	......	...	......	2	2
New growth, malignant—									
Carcinoma	......	2	......	......	......	2	......	2	4
Epithelioma	......	3	1	1	......	...	1	5	8
Squamous carcinoma	......	......	......	......	......	...	......	1	1
Anæmia	......	1	......	1	......	...	......	5	6
Idiopathic anæmia	......	1	1	......	......	...	......	....	1
Purpura	......	......	......	......	......	...	......	1	1
Hodgkin's disease	......	1	......	1	......	...	......	1	2
Debility	......	5	2	1	1	...	1	11	16
Local Diseases	52	682	409	224	27	20	54	2,420	3,154
DISEASES OF THE NERVOUS SYSTEM	7	30	16	8	7	1	5	92	129
Of the nerves—									
Neuritis	......	3	3	......	......	...	......	13	16
Multiple neuritis	1	3	3	......	......	1	......	....	4
Degeneration	......	1	......	......	1	...	......	1	2

Table VII.—Tabular Statement, by Districts, of Diseases and Injuries Treated during the Year ended June 30, 1902—Continued.

MIDDLE ATLANTIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
Diseases of the Nervous System—Con.									
Of the spinal cord and membranes—									
Cord—									
Inflammation—Local		1		1					1
Degeneration—Of posterior columns	2	1		1	1		1		3
Hyperæmia								2	2
Functional nervous disorders with other diseases of undetermined nature—									
Paralysis	1						1	1	2
Paraplegia	1	1	1		1				2
Hemiplegia	1	1			1		1		2
Local paralysis		1		1				1	2
Spasm		3	2				1	2	5
Epilepsy		2	1	1				4	6
Vertigo								4	4
Headache								13	13
Neuralgia	1	6	2	3	1		1	36	43
Hysteria		1	1						1
Aphasia		1	1						1
Nervous weakness		3	2	1				15	18
Mental diseases—									
Mania, acute		1			1				1
Melancholia		1			1				1
Diseases of the Eye		8	1	5			2	67	75
Conjunctivitis		3	1	2				58	61
Ecchymosis of conjunctiva								1	1
Keratitis		2					2		2
Iritis		1		1					1
Conjestion optic disk								1	1
Lenticular cataract		1		1					3
Ametropia								1	2
Obstruction of nasal duct								1	1
Blepharitis marginalis								3	1
Sty								2	1
Oedema of eyelid		1		1					1
Diseases of the Ear	1	3	1				3	32	36
Inflammation of the external meatus		1					1		1
Acute	1						1	9	10
Accumulation in external meatus of wax or epidermis								11	11
Inflammation of the middle ear—									
Nonsuppurative		1	1					6	7
Suppurative		1					1	6	7
Diseases of the Nose		1	1					29	30
Inflammation of soft parts		1	1					29	30
Diseases of septum								20	20
Perforation								1	1
Epistaxis								1	1
Inflammation of the naso-pharynx								18	18
Diseases of the Circulatory System	6	45	7	26	1	9	8	60	111
Endocarditis		2				2			2
Valvular disease—									
Aortic	1	7		6		2		3	11
Mitral	2	21	1	17		2	3	24	47
Mitral and aortic	1	8	5			1	3	16	25
Degeneration of heart—Fatty		1				1			1
Disordered action of the heart—									
Abnormal rapidity								2	2
Irregularity								10	10
Degeneration of arteries								1	1
Aneurysm of arteries	1	1	1			1			2
Thrombosis	1			1					1
Varix		5		2	1		2	4	9

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

MIDDLE ATLANTIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
DISEASES OF THE RESPIRATORY SYSTEM	6	103	57	37	5	6	4	306	415
Hay fever								1	1
Inflammation of mucous membrane of larynx—									
Catarrhal, acute	3		3					6	9
Catarrhal, chronic	1		1					2	3
Bronchitis—									
Catarrhal, acute		36	25	11				210	246
Catarrhal, chronic		13		11		1	1	11	24
Spasmodic asthma		8	3	5				4	12
Hæmoptysis		2	2						2
Pneumonia	1	16	9	2	2	3	1	1	18
Chronic interstitial inflammation		1			1				1
Phthisis—									
Acute								60	60
Chronic		2				2		5	7
Emphysema								1	1
Pleurisy—									
Acute	1	24	13	8	2		2		25
Chronic		1	1					1	2
Hydrothorax								3	3
Adhesions of pleura								1	1
DISEASES OF THE DIGESTIVE SYSTEM	11	134	104	30	1		10	727	872
Inflammation of the mouth								3	3
Ulceration of the mouth								13	13
Caries of dentine and cementum								5	5
Abscess of dental periosteum		3	1	1			1	8	11
Inflammation of gums and alveoli								1	1
Toothache								3	3
Sore throat		2	1				1		2
Inflammation of the tonsils—									
Follicular	1	16	15	1			1	30	47
Suppuration								2	2
Inflammation of salivary glands								1	1
Inflammation of the pharynx—									
Catarrhal		5	5					134	139
Granular								1	1
Follicular								5	5
Inflammation of the stomach—Catarrhal	1	20	14	4			3	23	44
Ulceration of the stomach—Superficial		2	1				1		2
Indigestion	1	1	2					168	170
Vomiting								1	1
Gastralgia		1	1					2	3
Loss of appetite								9	9
Inflammation of the intestines—									
Enteritis		11	10	1				2	13
Typhlitis	1	3	3	1					4
Colitis	1		1					1	2
Catarrhal		1		1				2	3
Hernia	4	17	19	1	1			129	150
Intestinal dyspepsia								1	1
Constipation		2	2					35	37
Diarrhea		14	11	2			1	99	113
Enteralgia								1	1
Inflammation of the rectum								4	4
Periproctitis—Abscess		3	1	2				1	4
Ulceration of the rectum								1	1
Fissure of the anus		2	2						2
Fistula in ano	1	3	1	2			1		4
Prolapse of the rectum								1	1
Piles—									
Internal	1	3	4					14	18
External		3	2	1				7	10
Mixed		8	4	4				3	11
Pruritus ani								4	4
Inflammation of the liver—									
Acute		4	1	3					4
Chronic		4		3			1		4

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

MIDDLE ATLANTIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged. Recovered.	Discharged. Improved.	Discharged. Not improved.	Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
DISEASES OF THE DIGESTIVE SYSTEM—Con.									
Hyperæmia of the liver								2	2
Jaundice		4	1	3				5	9
Inflammation of hepatic ducts and gall bladder		2	2					5	7
Calculi								1	1
DISEASES OF THE LYMPHATIC SYSTEM	4	68	48	20	4			73	145
Inflammation of lymph glands	4	68	48	20	4			73	145
DISEASES OF THE URINARY SYSTEM	2	24	4	16	4	2		45	71
Acute nephritis		6		4		2		2	8
Bright's disease		1		1					1
Chronic nephritis	2	5		6	1				7
Granular kidney		2		1	1			1	3
Calculus in pelvis		1	1					1	2
Glycosuria								1	1
Suppression of urine								2	2
Hæmaturia		1	1					1	2
Lithuria								1	1
Inflammation of bladder—									
Acute		4	2	1	1			29	33
Subacute								2	2
Chronic		3		2	1			2	5
Irritability of bladder								1	1
Retention of urine		1		1				1	2
Incontinence of urine								1	1
DISEASES OF THE GENERATIVE SYSTEM	5	135	84	44	2		10	413	558
Urethritis								11	11
Gleet								42	42
Abscess of the urethra		2					2		2
Ulcer of the urethra		1		1					1
Stricture of urethra—Organic		18	3	15				41	59
Inflammation of the prostate—Acute		1		1					1
Prostatorrhœa								3	3
Hypertrophy of the prostate		1		1				3	4
Phimosis		2	1	1				3	5
Paraphimosis		1	1					2	3
Inflammation of the glans of penis								5	5
Ulcer of penis	8	61	41	18			5	119	188
Œdema of penis		1			1			1	2
Soft chancre	2	14	16					114	130
Gangrene of penis		1	1						1
Pruritus of the scrotum								1	1
Inflammation of the spermatic cord								1	1
Hydrocele of the spermatic cord		1	1					1	2
Varicocele		2	1	1				9	11
Hydrocele of tunica vaginalis		7	2	3			2	5	12
Acute orchitis		11	7	3	1			27	38
Chronic orchitis		1	1						1
Epididymitis		10	9				1	20	30
Spermatorrhea								5	5
DISEASES OF THE ORGANS OF LOCOMOTION	2	28	17	9	2		2	178	208
Inflammation of the bones—Periostitis		1		1				2	3
Necrosis	1	3	2	2					4
Hypertrophy of the bones								1	1
Inflammation of joints—									
Acute synovitis		4	3	1				18	22
Chronic synovitis		1					1		1
Ankylosis								2	2
Loose body in joints		1	1						1
Relaxation ligament		1		1					1
Caries of the spine	1						1		1
Myalgia		11	8	2	1			140	151
Lumbago		1	1					9	10
Inflammation of sheaths of tendons		1		1				2	3

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

MIDDLE ATLANTIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
DISEASES OF THE ORGANS OF LOCOMOTION—Continued.									
Inflammation of bursæ—									
Acute		2	2					3	5
Chronic		1		1				1	2
Flat foot		1			1				1
DISEASES OF THE CONNECTIVE TISSUE	2	37	29	4	1		5	95	134
Inflammation	1	11	9	2			1	45	57
Abscess	1	26	20	2	1		4	48	75
Œdema								2	2
DISEASES OF THE SKIN	6	66	40	25		2	5	283	355
Erythema		1	1					4	5
Urticaria								3	3
Prickly heat								10	10
Eczema		5		5				32	37
Prurigro								2	2
Lichen								1	1
Psoriasis								7	7
Sudomina								2	2
Herpes								8	8
Zona		1	1					3	4
Dermatitis herpetiformis		1	1						1
Acne								7	7
Sycosis								4	4
Seborrhea								1	1
Alopecia								2	2
Ulcer	5	31	20	11		1	4	81	117
Boil		12	10	2				70	82
Carbuncle	1	5	4	1		1		13	19
Whitlow		3	1	1			1	20	23
Onychia		1	1					6	7
Corn		4	1	3				2	6
Cheloid		1		1				3	4
Lupus		1		1				2	3
Injuries	9	238	146	69	8		19	531	773
GENERAL INJURIES	1	28	21	5			3	36	65
Effects of heat—									
Burns and scalds		16	12	2			2	30	46
Heat stroke		4	3				1		4
Sunstroke		2	2						2
Effects of cold		1		1					1
Effects of chemical irritants and corrosives		1	1					2	3
Multiple injury	1	4	3	2				4	9
LOCAL INJURIES	8	205	125	64	8		16	495	708
Strain of muscles		2	2					2	4
Strain of tendons								1	1
Displacement of muscles		1		1					1
Abrasion of skin		9	4	3	1		1	2	11
Frostbite		6	5	1				6	12
Effects on the skin of irritants or corrosives		1		1					1
Contusion of scalp								1	1
Wound of scalp		5	5					20	25
With injury to the aponeurosis	1						1		1
Concussion of brain		1	1						1
Contusion of face	1	5	2	2	1		1	8	14
Wound of face and mouth		3	1	1	1			17	20
Fracture of facial bones		8	2	4			2		8
Contusion of eyelid								7	7
Wound of conjunctiva								1	1
Foreign bodies in the conjunctiva or cornea								3	3
Wound of eyeball		1		1					1
Contusion of pinna								1	1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

MIDDLE ATLANTIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
LOCAL INJURIES—Continued.									
Wound of neck	......	......	......	......	......	...	......	6	6
Foreign body in the food passages	......	......	......	......	......	...	......	1	1
Contusion of chest	1	16	8	9	......	...	......	22	39
Fracture of ribs	......	5	2	3	......	...	......	20	25
Contusion of back	......	3	1	1	1	...	......	17	20
Sprain of back	......	1	1	......	......	...	......	15	16
Contusion of abdomen	......	1	1	......	......	...	......	2	3
Wound of parietes of abdomen	......	......	......	......	......	...	......	4	4
Contusion of the perinæum, scrotum, or penis	......	......	......	......	......	...	......	2	2
Wound of the male urethra, perinæum, scrotum, testis, or penis	......	1	1	......	......	...	......	1	2
Contusion of testicle	......	3	1	2	......	...	......	....	3
Contusion of upper extremities	......	11	8	1	1	...	1	38	49
Sprain of shoulder	......	1	.. ..	1	......	...	......	2	3
Sprain of wrist	......	1	......	......	......	...	1	10	11
Wound of upper extremities	1	29	19	9	......	...	2	183	213
Fracture of clavicle	......	5	4	......	......	...	1	....	5
Fracture of scapula	......	1	1	......	......	...	......	1	2
Fracture of humerus	......	2	2	......	......	...	......	2	4
Fracture of bones of forearm	......	1	1	......	......	...	......	....	1
Radius	......	1	1	......	......	...	......	....	1
Ulna	......	2	2	......	......	...	......	....	2
Both bones	1	2	2	1	......	...	......	2	5
Fracture of carpus, metacarpus, or phalanges	......	5	5	......	......	...	......	6	11
Dislocation of humerus	......	1	1	......	......	...	......	2	3
Dislocation of carpus	......	1	......	......	1	...	......	....	1
Contusion of lower extremities	......	15	11	2	1	...	1	19	34
Sprain of knee	......	3	1	1	......	...	1	5	8
Sprain of ankle	......	18	10	7	1	...	......	25	43
Sprain of foot	......	1	......	1	......	...	......	2	3
Wound of lower extremities	1	25	12	11	......	...	3	33	59
Fracture of patella	1	......	1	......	......	...	......	....	1
Fracture of tibia	......	1	1	......	......	...	......	....	1
Fracture of fibula	......	2	1	......	......	...	1	5	7
Fracture of tibia and fibula	......	3	2	1	......	...	......	....	3
Fracture of bones of foot	......	1	1	......	......	...	......	....	1
Of the metatarsus	1	......	1	......	......	...	......	....	1
Dislocation of tibia	......	1	1	......	......	...	......	....	1
Dislocation of metatarsus and phalanges	......	......	......	......	......	...	......	1	1

SOUTH ATLANTIC.

Diseases.	Remaining under treatment from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
TOTAL CASES	**112**	**1,725**	**1,115**	**510**	**35**	**52**	**125**	**6,378**	**8,210**
General Diseases	**24**	**874**	**550**	**257**	**18**	**30**	**43**	**2,717**	**3,615**
Smallpox	......	2	2	......	......	...	......	....	2
Cowpox	......	7	1	6	......	...	......	14	21
Chicken pox	......	1	1	......	......	...	......	....	1
Measles	......	3	2	1	......	...	......	2	5
Influenza	......	53	36	14	1	2	......	120	173
Mumps	......	5	4	1	......	...	......	7	12
Diphtheria	......	2	1	......	1	...	......	....	2
Simple continued fever	......	2	2	......	......	...	......	....	2
Enteric fever	1	32	20	2	......	6	5	....	33
Typho-malarial fever	......	2	2	......	......	...	......	....	2
Choleraic diarrhœa	......	1	1	......	......	...	......	4	5
Epidemic diarrhœa	......	......	......	......	......	...	......	2	2
Dysentery	......	40	29	8	......	1	2	53	93
Malarial fever:									
Intermittent	5	239	210	21	......	3	10	811	1,055
Remittent	......	108	88	16	1	1	2	32	140
Sloughing phagedæna	......	1	1	......	......	...	......	....	1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

SOUTH ATLANTIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Erysipelas	.....	6	1	4	1	....	.....	2	8
Pyæmia	.....	1	.....	.....	.....	1	.....	.....	1
Septicæmia	.....	1	.....	.....	.....	1	.....	.....	1
Tetanus	.....	1	.....	.....	.....	1	.....	.....	1
Tubercle	5	63	5	30	8	14	11	33	101
Syphilis:									
Primary	1	29	6	20	.....	....	4	71	101
Secondary	8	68	6	58	2	....	5	303	374
Gonorrhea	2	85	52	32	.....	....	3	681	768
Diseases dependent on animal parasites:									
Tænia solium	.....	.....	.....	.....	.....	....	.....	1	1
Ascaris lumbricoides	.....	.....	.....	.....	.....	....	.....	1	1
Phthirius inguinalis	.....	1	1	.....	.....	....	.....	1	2
Sarcoptes scabiei	.....	.....	.....	.....	.....	....	.....	15	15
Diseases dependent on vegetable parasites:									
Achorion Schönleinii	.....	.....	.....	.....	.....	....	.....	11	11
Tinea barbæ	.....	.....	.....	.....	.....	....	.....	1	1
Ringworm	.....	1	1	.....	.....	....	.....	.....	1
Effects of animal poisons	.....	1	1	.....	.....	....	.....	1	2
Effects of vegetable poisons:									
Atropia	.....	.....	.....	.....	.....	....	.....	1	1
Rhus	.....	.....	.....	.....	.....	....	.....	3	3
Nux vomica	.....	1	1	.....	.....	....	.....	.....	1
Effects of inorganic poisons—Lead	.....	.....	.....	.....	.....	....	.....	1	1
Effects of the presence of foreign bodies	.....	.....	.....	.....	.....	....	.....	1	1
Effects of mechanical injuries	.....	1	.....	1	.....	....	.....	.....	1
Effects of heat	.....	3	2	1	.....	....	.....	.....	3
Effects of cold	.....	1	1	.....	.....	....	.....	.....	1
Alcoholism	.....	5	5	.....	.....	....	.....	6	11
Rheumatic fever	2	21	11	12	.....	....	.....	26	49
Rheumatism	5	78	53	27	2	....	1	399	482
Gout	.....	2	.....	2	.....	....	.....	6	8
Cyst:									
Mucous	.....	.....	.....	.....	.....	....	.....	2	2
Sebaceous	.....	.....	.....	.....	.....	....	.....	4	4
New growth, nonmalignant:									
Lipoma	.....	2	2	.....	.....	....	.....	.....	2
Fibroma	.....	1	1	.....	.....	....	.....	1	2
Papilloma	.....	2	1	1	.....	....	.....	18	20
Pterygium	.....	.....	.....	.....	.....	....	.....	1	1
Carcinoma	.....	1	.....	.....	1	....	.....	3	4
Epithelioma	.....	.....	.....	.....	.....	....	.....	1	1
Anæmia	.....	.....	.....	.....	.....	....	.....	6	6
Purpura	.....	.....	.....	.....	.....	....	.....	2	2
Hodgkin's disease	.....	.....	.....	.....	.....	....	.....	1	1
Diabetes mellitus	.....	.....	.....	.....	.....	....	.....	1	1
Debility	.....	.....	.....	.....	.....	....	.....	68	68
Old age	.....	1	.....	.....	1	....	.....	.....	1
Local Diseases	**70**	**644**	**410**	**203**	**18**	**20**	**68**	**3,177**	**3,891**
DISEASES OF THE NERVOUS SYSTEM	39	43	22	18	.....	2	40	159	241
Of the nerves—									
Neuritis	.....	3	2	1	.....	....	.....	8	11
Multiple neuritis	.....	1	1	.....	.....	....	.....	.....	1
Of the spinal cord and membranes—membranes—									
Inflammation—Of pia mater and arachnoid	.....	1	1	.....	.....	....	.....	.....	1
Of the spinal cord and membranes—cord—									
Degeneration of posterior columns	.....	1	.....	.....	.....	....	1	.....	1
Hæmorrhage	.....	1	1	.....	.....	....	.....	.....	1
Of the brain and its membranes—membranes—									
Hæmorrhage	.....	1	.....	1	.....	....	.....	3	4
Of the brain and it membranes—brain—									
Sclerosis	3	.....	.....	1	.....	....	2	.....	3
Hæmorrhage	1	.....	.....	1	.....	....	.....	2	3
Hyperæmia	.....	1	.....	1	.....	....	.....	.....	1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

SOUTH ATLANTIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE NERVOUS SYSTEM—Con.									
Functional nervous disorders with other diseases of undetermined nature—									
Paraplegia	1	3	.....	2	.....	...	2	......	4
Hemiplegia	4	3	.....	4	.....	...	3	3	10
Local paralysis	.....	1	1	.....	.....	...	.....	1	2
Spasm	.....	.....	.....	.....	.....	...	.....	2	2
Torticollis	.....	.....	.....	.....	.....	...	.....	2	2
Epilepsy	.....	1	.....	1	.....	...	.....	3	4
Vertigo	.....	.....	.....	.....	.....	...	.....	6	6
Headache	.....	.....	.....	.....	.....	...	.....	9	9
Hyperæsthesia	.....	.....	.....	.....	.....	...	.....	1	1
Aphasia	.....	1	.....	.....	.....	...	1	......	1
Neuralgia	.....	19	15	4	.....	...	.....	109	128
Nervous weakness	.....	1	.....	1	.....	...	.....	10	11
Mental diseases—									
Mania—									
Acute	4	1	1	.....	.....	...	4	......	5
Chronic	7	.....	.....	.....	.....	...	7	......	7
Melancholia—									
Acute	4	.....	.....	.....	.....	...	4	......	4
Chronic	9	.....	.....	.....	.....	2	7	......	9
Dementia—									
Acute	1	1	.....	.....	.....	...	2	......	2
Chronic	2	.....	.....	.....	.....	...	2	......	2
Epileptic	1	1	.....	.....	.....	...	2	......	2
General paralysis of the insane	2	1	.....	.....	.....	...	3	......	3
Delusional insanity	.....	1	.....	1	.....	...	.....	......	1
DISEASES OF THE EYE	2	12	8	3	1	...	2	86	100
Conjunctivitis	.....	3	2	1	.....	...	.....	......	3
Catarrhal, acute	.....	.....	.....	.....	.....	...	.....	54	54
Keratitis	.....	.....	.....	.....	.....	...	.....	3	3
Ulceration of cornea	.....	1	1	.....	.....	...	.....	2	3
Iritis	.....	5	2	2	1	...	.....	6	11
Choroiditis	.....	.....	.....	.....	.....	...	.....	1	1
Congestion of optic disc	.....	1	1	.....	.....	...	.....	......	1
Mydriasis	.....	.....	.....	.....	.....	...	.....	1	1
Glaucoma	1	2	2	.....	.....	...	1	1	4
Lenticular cataract	1	.....	.....	.....	.....	...	1	......	1
Capsular cataract	.....	.....	.....	.....	.....	...	.....	1	1
Functional night blindness	.....	.....	.....	.....	.....	...	.....	3	3
Day blindness	.....	.....	.....	.....	.....	...	.....	2	2
Ametropia	.....	.....	.....	.....	.....	...	.....	1	1
Presbyopia	.....	.....	.....	.....	.....	...	.....	1	1
Blepharitis marginalis	.....	.....	.....	.....	.....	...	.....	3	3
Sty	.....	.....	.....	.....	.....	...	.....	6	6
Œdema of eyelid	.....	.....	.....	.....	.....	...	.....	1	1
DISEASES OF THE EAR	.....	7	3	4	.....	...	.....	46	53
Inflammation of the external meatus—									
Acute	.....	1	1	.....	.....	...	.....	5	6
Accumulation in external meatus of wax or epidermis	.....	1	1	.....	.....	...	.....	15	16
Inflammation of the middle ear—									
Nonsuppurative	.....	4	1	3	.....	...	.....	11	15
Suppurative	.....	1	.....	1	.....	...	.....	6	7
Perforation of membrana tympani	.....	.....	.....	.....	.....	...	.....	2	2
Obstruction of Eustachian tube	.....	.....	.....	.....	.....	...	.....	5	5
Deafness	.....	.....	.....	.....	.....	...	.....	2	2
DISEASES OF THE NOSE	.....	2	1	1	.....	...	.....	56	58
Inflammation of soft parts	.....	.....	.....	.....	.....	...	.....	55	55
Inflammation of framework—Necrosis	.....	2	1	1	.....	...	.....	1	3
Diseases of septum	.....	1	1	.....	.....	...	.....	7	8
Epistaxis	.....	1	1	.....	.....	...	.....	4	5
Inflammation of the naso-pharynx	.....	.....	.....	.....	.....	...	.....	3	3

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

SOUTH ATLANTIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
DISEASES OF THE CIRCULATORY SYSTEM	1	36	1	26	1	7	2	38	75
Pericarditis								2	2
Valvular disease—									
Aortic		9		6	1	2		1	10
Mitral		17	1	12		4		22	39
Aortic and mitral	1	3		2		1	1		4
Tricuspid		1		1					1
Hypertrophy of heart		2		1			1	2	4
Disordered action of the heart—									
Abnormal rapidity								3	3
Irregularity								3	3
Aneurysm of arteries		1		1				1	2
Obstruction of vein		1		1				1	2
Varix		2		2				3	5
DISEASES OF THE RESPIRATORY SYSTEM	1	80	57	16	1	5	2	423	504
Inflammation of mucous membrane of larynx—									
Catarrhal, acute		1		1				7	8
Catarrhal, chronic								1	1
Tracheitis								1	1
Bronchitis—									
Catarrhal, acute		34	27	6	1			381	415
Catarrhal, chronic		4		2			2		4
Spasmodic asthma		2	2					9	11
Congestion of lung		1				1			1
Hæmorrhage of lung								1	1
Hæmoptysis								1	1
Pneumonia	1	32	24	5		4		1	34
Phthisis—Chronic		1		1					1
Pleurisy—									
Acute		5	4	1				17	22
Chronic								4	4
DISEASES OF THE DIGESTIVE SYSTEM	6	135	95	35	3	1	7	1,015	1,156
Inflammation of the lips								1	1
Ulceration of the lips								5	5
Inflammation of the mouth								11	11
Caries of dentine and cementum								32	32
Abscess of dental periosteum								2	2
Inflammation of gums and alveoli								15	15
Suppuration of alveoli								1	1
Ulceration of gums and alveoli								3	3
Toothache								20	20
Ulceration of the tongue								1	1
Sore throat		1		1				42	43
Inflammation of the tonsils—									
Follicular		18	14	4				67	85
Suppuration		3	2	1				1	4
Hypertrophy of tonsils		3	1	2				1	4
Elongated uvula								5	5
Inflammation of salivary glands								1	1
Inflammation of the pharynx—									
Catarrhal		4	3	1				50	54
Granular								1	1
Follicular		1			1			5	6
Post-pharyngeal abscess		1		1					1
Ulceration of pharynx		2	2					2	4
Inflammation of the stomach—catarrhal	1	20	15	4	1		1	107	128
Ulceration of the stomach—									
Superficial		2		2					2
Perforating								2	2
Dilatation of the stomach		1					1		1
Indigestion		7	7					168	175
Pyrosis								1	1
Vomiting								1	1
Gastralgia								6	6
Loss of appetite								11	11

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

SOUTH ATLANTIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE DIGESTIVE SYSTEM—Con.									
Inflammation of the intestines—									
Enteritis	2	3	3	2				3	8
Typhlitis		3	2				1	1	4
Colitis		3	2	1				15	18
Catarrhal	1	11	10	1		1		31	43
Fæcel accumulation		1	1						1
Hernia	1	11	8	4				78	90
Stricture of rectum		1	1						1
Obstruction of the intestines		1	1					1	2
Constipation		1	1					104	105
Colic								15	15
Diarrhœa		7	6	1				111	118
Enteralgia								10	10
Periproctitis—Abscess		3	1		1		1	1	4
Fistula in ano	1	6	6	1				2	9
Ulceration of rectum		1	1						1
Piles—									
Internal		6	5	1				19	25
External								29	29
Mixed								1	1
Pruritus ani								2	2
Inflammation of the liver—									
Acute		1					1	1	2
Chronic		2		1			1	1	3
Hyperæmia of the liver								21	21
Hypertrophy of the liver		1					1		1
Jaundice		3	1	2				3	6
Inflammation of hepatic ducts and gall bladder		5	2	3				4	9
Calculi		2		2					2
DISEASES OF THE LYMPHATIC SYSTEM	2	69	49	14	1		7	120	191
Inflammation of lymph glands	2	33	22	11			2	114	149
Suppuration		32	24	2	1		5	4	36
Hypertrophy of lymph glands								2	2
Inflammation of lymphatics		2	1	1					2
Obstruction of lymphatics		1	1						1
Elephantiasis		1	1						1
DISEASES OF THE URINARY SYSTEM	6	33	12	18	1	5	3	80	119
Acute nephritis		8	1	2				2	5
Bright's disease	1	8	1	5	1	2		16	25
Chronic nephritis	4	5	7			2		2	11
Granular kidney		5		3		1	1	3	8
Congestion of kidney								1	1
Nephralgia								1	1
Calculus in ureter								1	1
Suppression of urine								8	3
Hæmaturia		1	1					3	4
Albuminuria								1	1
Lithuria								6	6
Inflammation of bladder—									
Acute		9	2	7				28	37
Chronic	1	2		1			2	3	6
Irritability of bladder								8	8
Incontinence of urine								2	2
DISEASES OF THE GENERATIVE SYSTEM	8	96	58	42	3		1	445	549
Urethritis								41	41
Gleet								20	20
Abscess of the urethra								1	1
Hæmorrhage of the urethra								1	1
Stricture of the urethra—									
Organic	3	25	7	19	2			58	86
Spasmodic								1	1
Inflammation of the prostate		1		1				1	2
Prostatarrhœa								1	1
Hypertrophy of the prostate		1		1					1
Posthitis								1	1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

SOUTH ATLANTIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
DISEASES OF THE GENERATIVE SYSTEM—Continued.									
Phimosis		3	1	2				9	12
Paraphimosis		2	2					2	4
Concretions of prepuce								1	1
Inflammation of the penis								2	2
Of the glans								18	18
Abscess of penis								6	6
Ulcer of penis		21	15	5			1	52	73
Œdema of penis								3	3
Soft chancre	4	31	26	9				168	203
Gangrene of penis		1	1						1
Inflammation of the scrotum								1	1
Abscess of the scrotum		1		1				1	2
Varicocele		1			1			20	21
Hydrocele of tunica vaginalis								5	5
Acute orchitis	1	6	3	4				16	23
Chronic orchitis								3	3
Epididymitis		3	3					4	7
Impotence								7	7
Dysmenorrhœa								1	1
Leucorrhœa								1	1
DISEASES OF THE ORGANS OF LOCOMOTION	2	45	36	9	1		1	274	321
Inflammation of the bones—Periostitis		5	3	2				3	8
Caries		3	2		1				3
Necrosis		2	1	1				2	4
Inflammation of joints—Acute synovitis	1	6	5	2				5	12
Ankylosis								3	3
Loose body in joint								1	1
Psoas, lumbar, and other abscesses	1		1						1
Inflammation of muscles								3	3
Myalgia		20	18	2				212	232
Lumbago		1	1					26	27
Contracture of fasciæ								1	1
Inflammation of sheaths of tendons		1					1	5	6
Thecal abscess		5	4	1					5
Ganglion								2	2
Inflammation of bursæ—Acute								6	6
Abscess of bursæ		1	1						1
Bunion								1	1
Bursal cyst		1		1				4	5
DISEASES OF THE CONNECTIVE TISSUE		35	30	4			1	69	104
Inflammation		11	11					34	45
Abscess		24	19	4			1	34	58
Œdema								1	1
DISEASES OF THE SKIN	3	50	37	13	1		2	359	412
Urticaria								7	7
Prickly heat								6	6
Eczema		4		4				70	74
Pityriasis rubra		1	1						1
Prurigro		1	1						1
Psoriasis		1	1					10	11
Sudamina								1	1
Herpes		1	1					12	13
Zona		1	1					4	5
Pemphigus								1	1
Dermatitis herpetiformis								4	4
Acne								12	12
Gutta rosea								1	1
Sycosis								2	2
Seborrhœa								1	1
Chilblain								5	5
Ulcer	1	13	10	2			2	83	97
Boil		11	9	2				87	98
Carbuncle		10	6	3	1			12	22
Whitlow	2	4	4	2				16	22

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

SOUTH ATLANTIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
DISEASES OF THE SKIN—Continued.									
Onychia		1	1					10	11
Corn								2	2
Cheloid								1	1
Wen		2	2					4	6
Hyperidrosis								8	8
Pruritus								4	4
Lupus								1	1
Injuries	18	207	155	50	4	2	14	479	704
GENERAL INJURIES	1	16	13	3			1	27	44
Effects of heat—									
Burns and scalds	1	15	12	3			1	26	42
Sunstroke								1	1
Multiple injury		1	1						1
LOCAL INJURIES	17	191	142	47	4	2	13	452	660
Contusion of muscles		1	1						1
Strain of muscles		1		1				9	10
Contusion of glands								1	1
Rupture of tendons		1	1						1
Contusion of skin		3	2	1				4	7
Abrasion of skin								13	13
Wound of skin								2	2
Burn or scald of skin		1	1						1
Frostbite	1	10	9	2				6	17
Contusion of scalp		2	1	1				1	3
Wound of scalp	1	4	4	1				19	24
With injury to the aponeurosis		2	1	1				1	3
Fracture of the vault of skull		1				1			1
Wound of skull	1		1						1
Concussion of brain		2	1	1					2
Contusion of face		8	2	1				4	7
Wound of face and mouth		4	1	1	1		1	18	22
Fracture of facial bones		3		2			1		3
Dislocation of lower jaw								1	1
Contusion of eyelid								1	1
Wound of eyelid								1	1
Foreign bodies in the conjunctiva or cornea								13	13
Wound of eyeball								1	1
Wound of neck								1	1
Foreign body in the air passages								1	1
Contusion of chest		8	5	1		1	1	16	24
Fracture of ribs		4	2	2				1	5
Wound of parietes of chest		1	1						1
Contusion of back		6	3	2			1	8	14
Sprain of back		5	4	1				13	18
Wound of back								1	1
Contusion of abdomen		2	2					4	6
Wound of parietes of abdomen								4	4
Contusion of the pelvis		2	1				1		2
Wound of the male urethra, perinæum, scrotum, testis, or penis	1		1					1	2
Contusion of testicle		1	1						1
Contusion of upper extremities		8	6	1			1	45	53
Sprain of shoulder	1	1	2					5	7
Sprain of elbow								3	3
Sprain of wrist	1	3	2	2				22	26
Sprain of hand		1	1					1	2
Sprain of thumb								2	2
Sprain of fingers		1	1					2	3
Wound of upper extremities	2	27	20	9				112	141
Fracture of clavicle		2	2						2
Fracture of scapula								1	1
Fracture of humerus		1		1				1	2
Fracture of bones of forearm—									
Radius		1		1				1	1
Ulna		1	1					1	4
Both bones	1	2	2	1					2

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

SOUTH ATLANTIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
LOCAL INJURIES—Continued.									
Fracture of carpus, metacarpus, or phalanges		3	2	1				1	4
Dislocation of humerus	1	2	3					1	4
Dislocation of phalanges of fingers		1	1					1	2
Contusion of lower extremities	1	20	18	2	1			34	55
Sprain of hip								1	1
Sprain of knee								5	5
Sprain of ankle		19	15	4				26	45
Sprain of foot								2	2
Internal derangement of joints	1			1					1
Wound of lower extremities	1	14	11	4				38	53
Fracture of femur	1	3	2				2		4
Fracture of tibia		4	1	1			2	1	5
Fracture of fibula		1	1						1
Fracture of tibia and fibula		6	2	1			3	1	7
Fracture of bones of foot	3		3						3
Dislocation of foot		1	1						1
Dislocation of metatarsus and phalanges		2			2				2

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Diseases.	Remaining under treatment from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
TOTAL CASES	65	1,186	690	407	25	45	84	5,462	6,713
General Diseases	29	481	275	182	10	12	31	1,934	2,444
Cowpox								4	4
Measles		4	4						4
Influenza		13	11	2				82	95
Mumps								6	6
Diphtheria		1				1		1	2
Simple continued fever		2	2						2
Enteric fever		14	9			2	3		14
Dysentery	4	7	11					27	38
Beriberi		1		1					1
Malarial fever:									
Intermittent	6	128	93	33	1	2	5	303	437
Remittent	2	47	44	1	1		3	24	73
Erysipelas		3	1	1			1	3	6
Phlegmonous								1	1
Septicæmia		1	1						1
Tubercle	2	27	3	20	2	2	2	61	90
Syphilis:									
Primary	1	10		11				47	58
Secondary	6	83	15	63	1	1	9	271	360
Gonorrhea	1	26	16	11				510	537
Ancylostomo duodenale	1						1		1
Diseases dependent on animal parasites:									
Bothriocephalus latus								1	1
Tænia solium								3	3
Tænia mediocanellata		1		1				1	2
Ascaris lumbricoides								2	2
Pediculis pubis								1	1
Ixodes ricinus								2	2
Sarcoptes scabiei								11	11
Diseases dependent on vegetable parasites:									
Trichophyton tonsurans								8	8
Tænia tonsurans								1	1
Ringworm								10	10
Tænia versicolor								1	1
Effects of animal poisons								3	3
Effects of vegetable poisons:									
Rhus toxicodendron		1	1					2	3
Turpentine								2	2
Effects of inorganic poisons:									
Lead		1	1						1
Mercury								1	1
Ammonia								1	1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

GULF—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Effects of the presence of foreign bodies		2	1		1			3	5
Effects of heat		4	4						4
Effects of chemical agents		9	9					3	12
Alcoholism	2	15	10	4	1		2	22	39
Rheumatic fever		15	12	3				11	26
Rheumatism	2	51	20	27	2		4	411	464
Gout								2	2
Osteoarthritis		1		1				1	2
Cyst:									
Mucous								3	3
Sebaceous		1	1					7	8
New growth, nonmalignant:									
Lipoma								2	2
Fibroma		1	1						1
Papilloma								14	14
Pterygium								1	1
Carcinoma		2	1			1		13	15
Epithelioma	1	1	1	1					2
Squamous carcinoma								5	5
Myxædema	1			1					1
Anæmia		2	2					7	9
Diabetes mellitus		4			1	2	1	2	6
Diabetes insipidus								1	1
Debility		3	1	1		1		36	39
Local Diseases	34	547	304	188	12	29	48	2,817	3,398
DISEASES OF THE NERVOUS SYSTEM	7	35	5	23	5	3	6	278	320
Of the nerves—									
Neuritis		5		4			1	5	10
Multiple neuritis	1			1					1
Degeneration								2	2
Of the spinal cord and membranes—Membranes—									
Inflammation of dura mater								9	9
Of the spinal cord and membranes—Cord—									
Degeneration—									
Of lateral columns		2		1			1		2
Of posterior columns								1	1
Sclerosis		1		1					1
Of the brain and its membranes—Membranes—									
Inflammation of dura mater	1						1	1	2
Hæmorrhage		3	1	2				1	4
Of the brain and its membranes—Brain—									
Hæmorrhage	2	1		2			1	1	4
Functional nervous disorders with other diseases of undetermined nature—									
Apoplexy								3	3
Paralysis		1					1	1	2
Hemiplegia		5		1	3		1	11	16
Local paralysis								5	5
Incomplete paralysis		2		1	1				2
Spasm								4	4
Torticollis								6	6
Epilepsy	1	1		2					2
Vertigo								5	5
Headache		1	1					7	8
Neuralgia		6		6				198	204
Nervous weakness		4	3	1				16	20
Hiccough								2	2
Mental diseases—									
Mania		1			1				1
Chronic	2			1		1			2
Dementia		1				1			1
Mental stupor		1				1			1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

GULF—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE EYE		10	7	3				62	72
Conjunctivitis		7	5	2				43	50
Congestion of optic disk								1	1
Keratitis		1		1					1
Ulceration of cornea								2	2
Iritis		1	1					2	3
Mydriasis								1	1
Choroiditis								1	1
Lenticular cataract								1	1
Muscæ volitantes								1	1
Ametropia								1	1
Asthenopia								1	1
Dacrocystitis		1	1					1	2
Blepharitis marginalis								2	2
Sty								5	5
DISEASES OF THE EAR		10	3	6	1			45	56
Inflammation of the external meatus—									
Acute		1		1				3	4
Abscess								4	4
Accumulation in external meatus of wax or epidermis		2	1	1				24	26
Inflammation of the middle ear—									
Nonsuppurative		7	2	4	1			7	14
Suppurative								6	6
Tinnitus								1	1
DISEASES OF THE NOSE								13	13
Inflammation of soft parts								13	13
Diseases of septum								1	1
Inflammation of the accessory sinuses								1	1
DISEASES OF THE CIRCULATORY SYSTEM	1	33	5	13	1	11	4	49	83
Pericarditis		2		1		1			2
Endocarditis		1	1						1
Valvular disease—									
Aortic		4		3			1	6	10
Mitral	1	10	1	5		4	1	12	23
Aortic and mitral		7		2		4	1	2	9
Tricuspia		1		1					1
Degeneration of heart—Fatty								1	1
Hypertrophy of heart		2		1			1		2
Dilatation of heart								1	1
Angina pectoris								2	2
Disordered action of the heart—									
Abnormal rapidity		2	2					7	9
Irregularity								13	13
Degeneration of arteries								2	2
Arterio-capillary fibrosis		1				1			1
Aneurysm of arteries		1			1				1
Obstruction of arteries—Embolism		1				1			1
Phlebitis								1	1
Varix		1	1					2	3
DISEASES OF THE RESPIRATORY SYSTEM	8	76	58	12		5	4	499	578
Hay fever		2	1	1					2
Inflammation of mucous membrane of larynx—									
Catarrhal, acute		2	1	1				6	8
Catarrhal, chronic		1	1					2	3
Bronchitis—									
Catarrhal, acute	1	21	17	4		1		430	452
Catarrhal, chronic		5	4	1				31	36
Spasmodic asthma		4	3				1	12	16
Hæmorrhage of lung		2		1			1	1	3
Hæmoptysis		1		1					1
Pneumonia	1	23	21			3		1	25
Broncho-pneumonia		1				1			1
Gangrene of lung		1		1					1
Chronic interstitial inflammation	1						1		1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

GULF—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE RESPIRATORY SYSTEM—Continued.									
Phthisis—									
Chronic		1	1						1
Tubercular								1	1
Emphysema								1	1
Pleurisy—									
Acute		11	8	2			1	9	20
Chronic		1	1					5	6
DISEASES OF THE DIGESTIVE SYSTEM	7	119	70	36	3	6	11	994	1,120
Inflammation of the lips								2	2
Inflammation of the mouth								5	5
Ulceration of the mouth		1	1					3	4
Suppuration of the dental pulp								1	1
Caries of dentine and cementum								52	52
Inflammation of the dental periosteum								6	6
Abscess of dental periosteum								3	3
Inflammation of gums and alveoli								2	2
Suppuration of alveoli		1	1						1
Ulceration of gums and alveoli								2	2
Toothache								19	19
Sore throat								19	19
Inflammation of the tonsils—									
Follicular		5	4	1				36	41
Suppuration		1	1						1
Salivation								1	1
Inflammation of the pharynx—									
Catarrhal		2	2					20	22
Follicular		5	4	1				7	12
Inflammation of the stomach—Catarrhal		27	15	10		2		14	41
Ulceration of the stomach—Perforating		1		1					1
Hypertrophy								1	1
Dilatation of the stomach								1	1
Indigestion		4	2	1			1	268	272
Vomiting								1	1
Gastralgia								2	2
Loss of appetite								11	11
Enteritis		2	1	1				1	3
Typhlitis		8	1			1	1	1	4
Colitis								1	1
Catarrhal		4	3			1		9	13
Fæcel accumulation		3	3					1	4
Hernia	2	14	7	5	2		2	102	118
Intestinal dyspepsia								4	4
Constipation	1	6	7					221	228
Colic	1	1	2					15	17
Diarrhœa		12	5	4	1		2	96	108
Periproctitis—Abscess	2	5	4	2			1	5	12
Ulceration of the anus		1	1						1
Fistula in ano		3	1	1			1	4	7
Hæmorrhage intestinal		1		1					1
Piles—									
Internal		2	1	1				20	22
External		6	3	2			1	15	21
Mixed		2	1	1				6	8
Inflammation of the liver—									
Acute		1					1	7	8
Chronic	1	2		1		1	1		3
Hyperæmia of the liver		2		2				6	8
Hypertrophy of the liver								2	2
Jaundice								1	1
Inflammation of hepatic ducts and gall bladder		1		1				1	2
Inflammation of the peritonæum		1				1			1
DISEASES OF THE LYMPHATIC SYSTEM	3	49	36	12			4	65	117
Congestion of spleen								2	2
Inflammation of lymph glands	3	38	29	9			3	53	94
Suppuration		11	7	3			1	10	21

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

GULF—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE URINARY SYSTEM	2	16	6	7		4	1	56	74
Acute nephritis	1	2	1	1		1		7	10
Bright's disease		1					1	2	3
Chronic nephritis		5		2		3		3	8
Granular kidney		1		1					1
Hydronephrosis		1		1					1
Nephralgia		1	1						1
Calculus in kidney								1	1
Movable kidney								1	1
Suppression of urine		1	1						1
Oxalmia								2	2
Inflamamation of bladder—									
Acute	1	3	3	1				22	26
Chronic								13	13
Ulceration of the bladder		1		1				1	2
Retention of urine								1	1
Incontinence of urine								3	3
DISEASES OF THE GENERATIVE SYSTEM	3	115	61	48	2		12	249	367
Gleet								2	2
Stricture of urethra—Organic	1	18	5	13			1	44	63
Urethral fistula		1	1						1
Inflammation of the prostate—									
Acute								1	1
Chronic								4	4
Hypertrophy of the prostate								9	9
Phimosis		8	4	2			2	5	13
Paraphimosis								2	2
Inflammation of the glans of penis								1	1
Ulcer of penis		16	9	2			5	1	17
Soft chancre	1	49	25	19	2		4	131	181
Abscess of the scrotum								1	1
Inflammation of the spermatic cord		1	1					2	3
Hydrocele of the spermatic cord								4	4
Varicocele		1	1					5	6
Hydrocele of tunica vaginalis		3	1	2				7	10
Inflammation of the testicle	1	18	14	5				25	44
Epididymitis								3	3
Spermatorrhœa								1	1
Impotence								1	1
DISEASES OF THE ORGANS OF LOCOMOTION	5	24	14	13			2	123	152
Inflammation of the bones—									
Periostitis		1		1				2	3
Osteonyelitis		1		1				2	3
Caries	2		1				1	1	3
Mollities ossium	1			1					1
Necrosis	1	3	3	1				2	6
Inflammation of joints—Acute synovitis	1	9	4	6				1	11
Idiopathic muscular atrophy								1	1
Myalgia		5	3	2				93	9[illegible]
Lumbago								5	5
Inflammation of sheaths of tendons		1	1						1
Thecal abscess		2	1				1	6	8
Ganglion								3	3
Inflammation of bursæ—									
Acute		1		1				5	6
Chronic								1	1
Abscess of bursæ		1	1						1
Bursal cyst								1	1
DISEASES OF THE CONNECTIVE TISSUE	1	30	19	10			2	73	104
Inflammation		9	7	2				35	44
Abscess	1	19	11	7			2	36	56
Gangrene		1		1					1
Œdema		1	1					2	3
DISEASES OF THE SKIN	2	30	20	10			2	310	342
Erythema		2	1	1				1	3
Urticaria								6	6

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

GULF—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE SKIN—Continued.									
Prickly heat								4	4
Eczema		1		1				76	77
Impetigo		1		1				3	4
Prurigro								1	1
Lichen								1	1
Psoriasis		1	1					3	4
Herpes								12	12
Zona		2	1	1					2
Acne								1	1
Leucodermia								3	3
Chilblain								6	6
Ulcer	1	14	8	5			2	98	113
Boil		5	5					56	61
Carbuncle		1	1					4	5
Whitlow		1		1				17	18
Onychia		1	1					4	5
Corn								3	3
Wen								3	3
Pruritus								2	2
Lupus	1	1	2					6	8
Injuries	2	158	111	37	3	4	5	711	871
GENERAL INJURIES		15	11	4				23	38
Effects of heat—									
Burns and scalds		11	7	4				22	33
Heat stroke		2	2						2
Lightning stroke								1	1
Exhaustion		2	2						2
LOCAL INJURIES	2	143	100	33	3	4	5	688	833
Rupture of veins								1	1
Contusion internal viscera		1	1						1
Contusion of muscles		1			1				1
Strain of muscles		1			1			18	19
Rupture of muscles		1			1			2	3
Strain of tendons								1	1
Rupture of tendons								1	1
Abrasion of skin								9	9
Wound of skin		2	1				1	11	13
Burn or scald of skin								185	185
Frostbite								12	12
Wound of scalp		8	6	2				17	25
With injury to the pericranium		1		1					1
Fracture of the base of skull		1				1			1
Contusion of face		2	1	1				5	7
Wound of face and mouth		2	1	1				8	10
Fracture of facial bones		3		3				1	4
Contusion of eyelid								2	2
Contusion of eyeball								1	1
Foreign bodies in the conjunctiva or cornea								3	3
Wound of eyeball								1	1
Contusion of neck								3	3
Wound of neck		1	1					3	4
Contusion of chest		2	2					42	44
Fracture of ribs		6	4	2				9	15
Wound of chest, gunshot		2	1	1					2
Contusion of back		11	8	3				16	27
Sprain of back		2	1	1				19	21
Fracture of spine		2	1			1			2
Contusion of abdomen		2	2					2	4
Wound of parietes of abdomen								1	1
Wound of liver		1				1			1
Contusion of the pelvis								2	2
Contusion of testicle								4	4
Contusion of upper extremities		2	2					23	25
Sprain of shoulder								32	32
Sprain of elbow								9	9

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

GULF—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
LOCAL INJURIES—Continued.									
Sprain of wrist								15	15
Sprain of thumb								1	1
Sprain of fingers								5	5
Wound of upper extremities		23	17	4		1	1	140	163
Fracture of clavicle		1	1						1
Fracture of humerus		2	2						2
Fracture of bones of forearm—									
Radius		2	1	1					2
Ulna	1	1	2						2
Both bones		3	1	2				4	7
Fracture of carpus, metacarpus, or phalanges		4	3	1				5	9
Dislocation of humerus		1	1						1
Dislocation of phalanges of fingers								1	1
Contusion of lower extremities		10	6	3			1	38	48
Sprain of hip								1	1
Sprain of knee		1	1					13	14
Sprain of ankle		5	3	2				13	18
Sprain of foot								1	1
Wound of lower extremities	1	26	24	3				57	84
Fracture of femur		2	1	1					2
Fracture of tibia		3	2	1					3
Fracture of tibia and fibula		3	1				2	1	4
Fracture of bones of foot		1	1						1
Dislocation of femur		1	1						1

OHIO.

Diseases.	Remaining under treatment from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
TOTAL CASES	**51**	**1,148**	**795**	**326**	**12**	**26**	**40**	**3,884**	**5,083**
General Diseases	**14**	**409**	**267**	**129**	**6**	**7**	**14**	**1,517**	**1,940**
Smallpox		3	3					2	5
Cowpox		1	1					4	5
Chicken pox								1	1
Measles		4	4					1	5
Influenza		42	39	2	1			73	115
Mumps		2	1	1				2	4
Diphtheria		1	1						1
Enteric fever	1	17	15	1		1	1	7	25
Dysentery	1	20	19	2				20	41
Malarial fever:									
Intermittent	1	56	47	8		1	1	271	328
Remittent	2	14	14	2				5	21
Erysipelas		7	7					3	10
Tubercle	3	34	2	20	2	5	8	44	81
Syphilis:									
Primary		11	2	8			1	26	37
Secondary	3	56	3	53	2		1	225	284
Gonorrhea		29	20	9				378	407
Diseases dependent on animal parasites:									
Tænia solium								1	1
Tænia mediocanellata		1	1						1
Phthirius inguinalis								3	3
Sarcoptes scabiei								3	3
Diseases dependent on vegetable parasites:									
Trichophyton tonsurans								1	1
Aspergillus flavus								1	1
Ringworm								1	1
Effects of vegetable poisons:									
Rhus								3	3
Potassium iodide								1	1
Effects of inorganic poisons—Lead								1	1
Effects of the presence of foreign bodies								2	2
Effects of heat		2	2					1	3
Alcoholism		19	15	4				27	46

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

OHIO—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Rheumatic fever	1	24	24	1				23	48
Rheumatism	2	65	46	18	1		2	328	395
Cyst:									
Mucous								3	3
Sebaceous								2	2
New growth, nonmalignant:									
Lipoma								1	1
Papilloma								5	5
New growth, malignant:									
Carcinoma								1	1
Squamous carcinoma								1	1
Anæmia		1	1					1	2
Diabetes insipidus								4	4
Debility								41	41
Local Diseases	**28**	**537**	**381**	**146**	**6**	**18**	**14**	**2,034**	**2,599**
DISEASES OF THE NERVOUS SYSTEM	7	26	14	10		4	5	100	133
Of the nerves—Neuritis		4	4					6	10
Of the spinal cord and membranes—Cord—									
Degeneration—Of posterior columns	2	5	2	4			1	10	17
Of the brain and its membranes—Membranes—									
Hemorrhage		2	1				1		2
Of the brain and its membranes—Brain—									
Sclerosis		1		1					1
Functional nervous disorders with other diseases of undetermined nature—									
Paralysis		1				1			1
Hemiplegia	3	3		2		2	2	1	7
Incomplete paralysis								1	1
Writer's cramp								1	1
Epilepsy								3	3
Vertigo								4	4
Headache								11	11
Hyperæsthesia		1	1						1
Anæsthesia								1	1
Neuralgia	2	3	4			1		56	61
Nervous weakness		5	1	3			1	5	10
Mental diseases—Melancholia		1	1					1	2
DISEASES OF THE EYE		8	5	2			1	41	49
Conjunctivitis		2	2					34	36
Keratitis		2	2						2
Ulceration of cornea		1		1					1
Iritis		2		1			1	2	4
Amblyopia—Sympathetic irritation		1	1						1
Stricture of puncta								1	1
Blepharitis marginalis								1	1
Sty								2	2
Abscess of eyelid								1	1
DISEASES OF THE EAR		4	3	1				19	23
Inflammation of the external meatus—Acute								1	1
Accumulation in external meatus of wax or epidermis								2	2
The middle ear—									
Nonsuppurative		4	3	1				14	18
Suppurative								1	1
Deafness								1	1
DISEASES OF THE NOSE	1		1					58	59
Inflammation of soft parts	1		1					58	59
Diseases of septum								4	4
Epistaxis								1	1
Inflammation of the accessory sinuses								3	3

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

OHIO—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE CIRCULATORY SYSTEM	1	23	2	20	......	2	......	45	69
Pericarditis	......	1	1	......	......	......	......	......	1
Valvular disease—									
Aortic	......	8	......	8	......	......	......	5	13
Mitral	1	2	......	3	......	......	......	18	21
Aortic and mitral	......	4	1	2	......	1	......	......	4
Degeneration of heart—fibrous	......	......	......	......	......	......	......	2	2
Disordered action of the heart—irregularity	......	......	......	......	......	......	......	5	5
Raynaud's disease	......	3	......	3	......	......	......	1	4
Thrombosis	......	......	......	......	......	......	......	1	1
Endarteritis	......	......	......	......	......	......	......	3	3
Aneurysm of arteries	......	4	......	3	......	1	......	2	6
Phlebitis	......	......	......	......	......	......	......	3	3
Varix	......	1	......	1	......	......	......	5	6
DISEASES OF THE RESPIRATORY SYSTEM	2	94	69	18	3	6	......	444	540
Hay fever	......	......	......	......	......	......	......	1	1
Inflammation of mucous membrane of larynx	......	1	......	......	1	......	......	......	1
Catarrhal, acute	......	......	......	......	......	......	......	6	6
Catarrhal, chronic	......	......	......	......	......	......	......	2	2
Membranous	......	......	......	......	......	......	......	1	1
Tracheitis, acute	......	......	......	......	......	......	......	2	2
Bronchitis—									
Catarrhal, acute	1	38	34	5	......	......	......	368	407
Catarrhal, chronic	1	15	6	8	2	......	......	34	50
Spasmodic asthma	......	7	4	3	......	......	......	10	17
Hæmorrhage of lung—hæmoptysis	......	......	......	......	......	......	......	1	1
Pneumonia	......	26	19	1	......	6	......	......	26
Broncho-pneumonia	......	1	1	......	......	......	......	......	1
Phthisis—									
Chronic	......	......	......	......	......	......	......	1	1
Tubercular	......	......	......	......	......	......	......	1	1
Pleurisy—acute	......	5	5	......	......	......	......	16	21
Empyema	......	1	......	1	......	......	......	1	2
DISEASES OF THE DIGESTIVE SYSTEM	4	152	138	12	1	4	1	597	753
Inflammation of the mouth	......	......	......	......	......	......	......	1	1
Ulceration of the mouth	......	2	2	......	......	......	......	1	3
Caries of dentine and cementum	......	......	......	......	......	......	......	3	3
Abscess of dental periosteum	......	......	......	......	......	......	......	2	2
Inflammation of gums and alveoli	......	......	......	......	......	......	......	2	2
Toothache	......	......	......	......	......	......	......	6	6
Sore throat	......	......	......	......	......	......	......	3	3
Inflammation of the tonsils—									
Follicular	......	14	13	1	......	......	......	33	47
Suppuration	......	6	3	3	......	......	......	......	6
Hypertrophy of tonsils	......	......	......	......	......	......	......	1	1
Inflammation of the pharynx—									
Catarrhal	......	2	2	......	......	......	......	20	22
Follicular	......	......	......	......	......	......	......	1	1
Inflammation of the stomach—Catarrhal	1	15	13	1	......	2	......	95	111
Dilatation of the stomach	......	1	......	1	......	......	......	2	3
Indigestion	......	3	2	1	......	......	......	99	102
Pyrosis	......	......	......	......	......	......	......	3	3
Gastralgia	......	1	1	......	......	......	......	1	2
Inflammation of the intestines—									
Enteritis	......	5	5	......	......	......	......	4	9
Typhlitis	......	4	3	......	......	1	......	1	5
Catarrhal	1	39	38	1	1	......	......	......	40
Ulceration of the intestines	......	......	......	......	......	......	......	60	60
Hernia	......	4	3	1	......	......	......	53	57
Intestinal dyspepsia	......	......	......	......	......	......	......	2	2
Constipation	......	1	1	......	......	......	......	72	73
Colic	......	1	1	......	......	......	......	6	7
Diarrhœa	......	18	18	......	......	......	......	52	70
Periproctitis	......	2	2	......	......	......	......	2	4
Fistula in ano	1	2	3	......	......	......	......	1	4
Prolapse of the rectum	......	1	1	......	......	......	......	......	1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

OHIO—Continued.

Diseases.	Number of cases. Remaining under treatment from previous year.	Admitted during the year.	Discharged. Recovered.	Discharged. Improved.	Discharged. Not improved.	Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
DISEASES OF THE DIGESTIVE SYSTEM—Con.									
Piles—									
Internal								3	3
External	1	12	11	2				27	40
Mixed		7	7					6	13
Pruritus ani								1	1
Inflammation of the liver—									
Acute								18	18
Chronic								3	3
Hyperæmia of the liver		3	3					3	6
Jaundice		5	4	1				5	10
Inflammation of hepatic ducts and gall bladder		3	2			1		3	6
Biliary colic								1	1
Dropsy		1					1	1	2
DISEASES OF THE LYMPHATIC SYSTEM	2	33	22	11			2	50	85
Congestion of spleen								1	1
Hypertrophy of spleen								1	1
Inflammation of lymph glands	1	25	17	7			2	44	70
Suppuration	1	8	5	4				4	13
DISEASES OF THE THYROID BODY								1	1
Goitre								1	1
DISEASES OF THE URINARY SYSTEM	1	18	6	9	1	2	1	53	72
Acute nephritis		1				1		1	2
Bright's disease		3	1	2				1	4
Chronic nephritis	1	5		4	1		1	11	17
Granular kidney								2	2
Nephralgia								1	1
Abscess—Pyonephrosis		1				1			1
Calculus in kidney								1	1
Movable kidney								1	1
Inflammation of bladder—									
Acute		5	4	1				15	20
Chronic		2		2				12	14
Incontinence of urine		1	1					8	9
DISEASES OF THE GENERATIVE SYSTEM	6	83	49	38	1		1	234	323
Urethritis		2	1	1				2	4
Gleet								14	14
Stricture of urethra—Organic	1	16	6	11				39	56
Inflammation of the prostate—Acute		1					1	2	3
Hypertrophy of the prostate								1	1
Posthitis								3	3
Phimosis	1	5	5	1				2	8
Paraphimosis								1	1
Inflammation of the glans of penis								4	4
Abscess of penis		1		1					1
Ulcer of penis	1	16	5	12				11	28
Inflammation of the ovary								1	1
Soft chancre	1	27	21	7				103	131
Hydrocele of the spermatic cord	1		1						1
Varicocele								9	9
Hydrocele of tunica vaginalis		2	1	1				2	4
Inflammation of the testicle—									
Acute orchitis		9	6	2	1			27	36
Epididymitis		2		2				2	4
Spermatorrhœa								6	6
Gangrene of penis	1		1						1
Inflammation of the uterus								5	5
Menorrhagia		1	1						1
Leucorrhœa		1	1						1
DISEASES OF THE ORGANS OF LOCOMOTION		29	21	7			1	164	193
Necrosis		3	2	1					3
Inflammation of joints—Acute synovitis		1	1						1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued

OHIO—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
DISEASES OF THE ORGANS OF LOCOMOTION—Continued.									
Psoas, lumbar, and other abscesses		1	1					2	3
Myalgia		16	13	3				109	125
Lumbago		4	3	1				49	53
Inflammation of tendons		1		1					1
Inflammation of sheaths of tendons		1		1				1	2
Thecal abscess								1	1
Inflammation of bursæ—Acute								1	1
Abscess of bursæ		1	1						1
Bunion		1					1		1
Bursal cyst								1	1
DISEASES OF THE CONNECTIVE TISSUE	2	26	22	6				43	71
Inflammation		2	1	1				16	18
Abscess	2	24	21	5				26	52
Œdema								1	1
DISEASES OF THE SKIN	2	41	29	12			2	181	224
Erythema								1	1
Urticaria								7	7
Prickly heat								1	1
Eczema		3	3						3
Impetigo								55	55
Lichen								2	2
Psoriasis								1	1
Sudamina		1	1						1
Herpes		1	1					10	11
Zona		1	1					2	3
Gutta rosea								1	1
Sycosis		1	1					2	3
Ichthyosis								1	1
Ulcer	2	31	21	10			2	60	93
Boil								18	18
Carbuncle								3	3
Whitlow		2	1	1				4	6
Onychia		1		1				3	4
Corn								1	1
Cheloid								2	2
Hyperidrosis								3	3
Pruritus								4	4
Injuries	**9**	**202**	**147**	**51**		**1**	**12**	**333**	**544**
GENERAL INJURIES		7	6	1				16	23
Effects of heat—									
Burns and scalds		5	4	1				16	21
Heat stroke		1	1						1
Sunstroke		1	1						1
LOCAL INJURIES	9	195	141	50		1	12	317	521
Strain of muscles		3	3					2	5
Rupture of muscles		1	1						1
Abrasion of skin		1	1						1
Wound of skin								1	1
Frostbite		5	2	3				5	10
Wound of scalp	2	12	10	4				16	30
With injury to the aponeurosis		1	1						1
With injury to the pericranium								1	1
Fracture of the vault of skull		2	2						2
Concussion of brain		1	1						1
Contusion of face		3	3					3	6
Wound of face and mouth		3	1	2				5	8
Fracture of facial bones								1	1
Wound of conjunctiva								2	2
Foreign bodies in the conjunctiva or cornea								2	2
Contusion of pinna								1	1
Wound of pinna								3	3
Contusion of neck		2	2						2
Contusion of chest		3	2				1	12	15

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

OHIO—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
LOCAL INJURIES—Continued.									
Fracture of ribs	2	8	7	3				7	17
Contusion of back		11	10	1				4	15
Sprain of back		2	1	1				11	13
Wound of back		2	1	1				2	4
Concussion of cord		1		1					1
Contusion of abdomen	1		1					1	2
Wound of parieties of abdomen		1		1				1	2
Wound of the male urethra, perinæum, scrotum, testis, or penis								1	1
Contusion of testicle		2	2					2	4
Contusion of upper extremities	1	15	12	4				41	57
Sprain of shoulder								3	3
Sprain of wrist		2	2					13	15
Sprain of hand								5	5
Wound of upper extremities		23	11	9			3	72	95
Fracture of clavicle		1	1						1
Fracture of humerus		4	1	2			1	1	5
Fracture of bones of forearm—									
Ulna		2	2						2
Both bones		1		1					1
Fracture of carpus, metacarpus, or phalanges								5	5
Dislocation of clavicle		1		1				1	2
Dislocation of humerus		3	3					2	5
Dislocation of phalanges of thumb								1	1
Contusion of lower extremities		27	25	2				29	56
Sprain of knee	1	2	2	1				2	5
Sprain of ankle		18	16	1			1	21	39
Wound of lower extremities		24	11	8			5	36	60
Fracture of femur		2		1		1			2
Fracture of patella	1	1	1	1					2
Fracture of tibia		3	1	1			1		3
Fracture of fibula	1		1					2	3
Fracture of tibia and fibula		2	1	1					2

MISSISSIPPI.

Diseases.	Remaining under treatment from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
TOTAL CASES	**37**	**1,137**	**680**	**400**	**24**	**28**	**42**	**3,502**	**4,676**
General Diseases	**28**	**485**	**275**	**201**	**8**	**7**	**17**	**1,778**	**2,286**
Smallpox		4	1		1		2		4
Cowpox								200	200
Measles		1	1						1
Rubella								1	1
Influenza		20	16	4				56	76
Mumps		1	1					1	2
Diphtheria		1	1						1
Enteric fever	2	9	10			1			11
Dysentery		23	17	5		1		18	41
Malarial fever:									
Intermittent	7	122	113	12			4	404	533
Remittent	1	17	15	1			2	2	20
Erysipelas	1	5	6					4	10
Septicæmia	1		1						1
Tubercle	4	28		23	5	4		12	44
Syphilis:									
Primary		29	1	27			1	29	58
Secondary	6	90		95			1	312	408
Gonorrhea		25	16	8	1			269	294
Diseases dependent on animal parasites:									
Tænia solium		1		1					1
Phthirius inguinalis								3	3
Sarcoptes scabiei								6	6
Diseases dependent on vegetable parasites:									
Trichophyton tonsurans								9	9
Ringworm		1	1					1	2

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

MISSISSIPPI—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Effects of inorganic poisons—Lead		1		1					1
Effects of heat	1	2	3					1	4
Effects of cold		2	2						2
Alcoholism		5	5					7	12
Rheumatic fever		1	1					8	9
Rheumatism		84	59	18			7	377	461
Gout								4	4
Cyst		1	1					2	3
New growth, nonmalignant—Papilloma		5	8	2				5	10
New growth, malignant—Sarcoma		1				1			1
Anæmia								3	3
Diabetes mellitus		2		1	1			2	4
Debility		4	1	3				42	46
Local Diseases	**11**	**469**	**276**	**154**	**12**	**17**	**21**	**1,485**	**1,915**
DISEASES OF THE NERVOUS SYSTEM	1	33	14	10	3		7	55	89
Of the nerves—Neuritis		1	1					1	2
Of the spinal cord and membranes—Cord—									
Degeneration—Of posterior columns		2		1			1	1	3
Of the brain and its membranes—Membranes—									
Inflammation		1		1					1
Hæmorrhage		2			1		1		2
Functional nervous disorders with other diseases of undetermined nature—									
Apoplexy		1	1						1
Paralysis—									
Paraplegia		1		1					1
Hemiplegia		3		1			2	7	10
Local paralysis								6	6
Incomplete paralysis								1	1
Spasm		1	1						1
Epilepsy	1	4		3	1		1	4	9
Vertigo		2	1	1				2	4
Neuralgia		11	9				2	31	42
Nervous weakness		1	1					2	3
Mental diseases—									
Mania		1		1					1
Melancholia		2		1	1				2
DISEASES OF THE EYE		12	6	5			1	34	46
Conjunctivitis		9	3	5			1	30	39
Keratitis		1	1						1
Iritis		1	1					3	4
Sty								1	1
Abscess of eyelid		1	1						1
DISEASES OF THE EAR		1		1				18	19
Inflammation of the external meatus—Abscess								2	2
Accumulation in external meatus of wax or epidermis								4	4
Inflammation of the middle ear—									
Nonsuppurative		1		1				5	6
Suppurative								6	6
Ulceration of membrana tympani								1	1
DISEASES OF THE NOSE		1	1					16	17
Inflammation of soft parts		1	1					16	17
DISEASES OF THE CIRCULATORY SYSTEM	1	28		20	2	6	1	29	56
Pericarditis		1		1				1	2
Endocarditis		1		1					1
Valvular disease—									
Aortic		2		1	1			1	3
Mitral		12		9		3		16	28
Aortic and mitral		6		3	1	2		1	7
Mitral and tricuspid		1				1			1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

MISSISSIPPI—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE CIRCULATORY SYSTEM—Continued.									
Dilatation of heart	......	1	......	1	......	......	......	4	5
Angina pectoris	......	......	......	......	......	......	......	1	1
Disordered action of the heart—Irregularity	......	......	......	......	......	......	......	2	2
Arteritis—Degeneration of arteries	......	1	......	1	......	......	......	......	1
Varix	1	3	......	3	......	......	1	3	7
DISEASES OF THE RESPIRATORY SYSTEM	1	59	40	12	2	6	......	296	356
Inflammation of mucous membrane of larynx	......	......	......	......	......	......	......	2	2
Tracheitis, acute	......	......	......	......	......	......	......	2	2
Bronchitis—									
Catarrhal, acute	......	23	18	5	......	......	......	253	276
Catarrhal, chronic	......	2	......	1	......	1	......	5	7
Spasmodic asthma	......	2	......	2	......	......	......	3	5
Pneumonia	1	18	15	......	......	4	......	......	19
Emphysema	......	2	......	1	1	......	......	2	4
Pleurisy—Acute	......	11	7	2	1	1	......	29	40
Empyema	......	1	......	1	......	......	......	......	1
DISEASES OF THE DIGESTIVE SYSTEM	2	119	88	28	3	4	3	525	646
Ulceration of the lips	......	......	......	......	......	......	......	1	1
Inflammation of the mouth	......	1	1	......	......	......	......	1	2
Caries of dentine and cementum	......	......	......	......	......	......	......	13	13
Necrosis of cementum	......	......	......	......	......	......	......	3	8
Inflammation of gums and alveoli	......	......	......	......	......	......	......	2	2
Toothache	......	......	......	......	......	......	......	4	4
Sore throat	......	......	......	......	......	......	......	27	27
Inflammation of the tonsils—									
Follicular	......	8	8	......	......	......	......	21	29
Suppuration	......	1	1	......	......	......	......	......	1
Inflammation of the pharynx—									
Catarrhal	......	2	2	......	......	......	......	15	17
Follicular	......	1	1	......	......	......	......	......	1
Inflammation of the stomach—Catarrhal	......	11	9	1	......	......	1	5	16
Indigestion	1	3	4	......	......	......	......	57	61
Vomiting	......	......	......	......	......	......	......	1	1
Inflammation of the intestines—									
Enteritis	......	6	6	......	......	......	......	15	21
Typhlitis	......	1	......	......	......	......	1	1	2
Colitis	......	4	2	1	......	......	1	1	5
Catarrhal	......	7	5	2	......	......	......	8	15
Hernia	......	4	3	......	1	......	......	66	70
Intestinal dyspepsia	......	......	......	......	......	......	......	2	2
Constipation	......	4	4	......	......	......	......	147	151
Colic	......	1	1	......	......	......	......	......	1
Diarrhœa	......	36	29	5	1	1	......	77	113
Inflammation of the rectum	......	......	......	......	......	......	......	1	1
Periproctitis—Abscess	......	3	2	1	......	......	......	......	8
Fissure of the anus	......	......	......	......	......	......	......	2	2
Fistula in ano	......	7	4	3	......	......	......	......	7
Piles—									
Internal	......	2	1	1	......	......	......	3	5
External	1	5	1	5	......	......	......	21	27
Mixed	......	1	......	1	......	......	......	......	1
Inflammation of the liver—									
Acute	......	1	......	......	......	1	......	4	5
Chronic	......	3	......	......	1	2	......	......	3
Hyperæmia of the liver	......	4	2	2	......	......	......	18	22
Inflammation capsule liver	......	1	1	......	......	......	......	......	1
Degeneration of the liver—Fatty	......	......	......	......	......	......	......	1	1
Hypertrophy of the liver	......	1	......	1	......	......	......	4	5
Jaundice	......	1	1	......	......	......	......	1	2
Calculi	......	......	......	......	......	......	......	3	3
DISEASES OF THE LYMPHATIC SYSTEM	2	30	10	18	1	......	3	36	68
Inflammation of lymph glands	......	20	7	12	1	......	......	31	51
Suppuration	2	10	3	6	......	......	3	5	17

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

MISSISSIPPI—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE URINARY SYSTEM		14	5	7		1	1	28	42
Acute nephritis		3	2	1				2	5
Bright's disease—Chronic nephritis		3		1		1	1	1	4
Hæmaturia		1		1				2	3
Hemiglobinaria		1	1						1
Inflammation of bladder—									
Acute		4	1	3				16	20
Chronic		1		1					1
Irritability of bladder								7	7
Incontinence of urine		1	1						1
DISEASES OF THE GENERATIVE SYSTEM		97	62	33			2	151	248
Urethritis								5	5
Hæmorrhage of the urethra		1	1						1
Stricture of urethra—Organic		20	10	9			1	19	39
Urethral fistula		1		1				1	2
Inflammation of the prostate—Acute		1	1						1
Hypertrophy of the prostate								1	1
Œdema prepuce		1	1						1
Phimosis		9	8	1					9
Paraphimosis		1	1						1
Inflammation of the glands of penis								5	5
Ulcer of penis		2	1	1				6	8
Œdema of penis								1	1
Soft chancre		40	24	15			1	91	131
Hydrocele of the spermatic cord		1	1						1
Varicocele								3	3
Hydrocele of tunica vaginalis		2	1	1				2	4
Inflammation of the testicle								7	20
Acute orchitis		13	12	1					
Epididymitis		5	1	4				5	10
Impotence								1	1
Inflammation of the ovary								1	1
Inflammation of the vagina								2	2
Dysmenorrhœa								1	1
DISEASES OF THE ORGANS OF LOCOMOTION	2	21	13	8	1		1	71	94
Inflammation of the bones—									
Osteitis								1	1
Periostitis		1		1					1
Caries								1	1
Necrosis		4	2	2					4
Inflammation of joints—Acute synovitis		3	2				1	3	6
Ankylosis		1		1					1
Myalgia	1	9	7	2	1			50	60
Lumbago		1	1					13	14
Contraction of tendons		1	1					1	2
Inflammation of sheaths of tendons								1	1
Abscess of bursæ								1	1
Bunion	1			1					1
Hammertoe		1		1					1
DISEASES OF THE CONNECTIVE TISSUE		23	17	6				27	50
Inflammation		12	10	2				14	26
Abscess		11	7	4				13	24
DISEASES OF THE SKIN	2	31	20	11			2	149	182
Erythema								1	1
Urticaria								4	4
Prickly heat								1	1
Eczema		2		2				58	60
Pityriasis rubra		1		1				1	2
Herpes								3	3
Zona		1	1					2	3
Dermatitis herpetiformis								2	2
Ulcer	2	18	12	7			1	27	47
Boil		5	5					32	37
Carbuncle		1	1					3	4
Whitlow		2		1			1	8	10

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

MISSISSIPPI—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE SKIN—Continued.									
Onychia		1	1					1	2
Wen								1	1
Pruritus								5	5
Injuries	**3**	**188**	**129**	**45**	**4**	**4**	**4**	**289**	**475**
GENERAL INJURIES		14	11	3				22	36
Effects of heat—Burns and scalds		14	11	3				22	36
LOCAL INJURIES	3	169	118	42	4	4	4	267	439
Contusion of nerves								1	1
Strain of muscles		1	1					4	5
Strain of tendons								1	1
Abrasion of skin		1	1					1	2
Wound of skin		1		1				2	3
Frostbite		26	19	6	1			13	39
Contusion of mucous membrane								1	1
Wound of scalp		6	5	1				13	19
Fracture of the vault of skull		1		1					1
Contusion of face		4	4					3	7
Wound of face and mouth		3	2	1				5	8
Fracture of facial bones		1	1						1
Contusion of eyelid		2	2						2
Wound of conjunctiva								1	1
Foreign bodies in the conjunctiva or cornea								2	2
Wound of neck		1				1			1
Contusion of chest		5	4	1				3	8
Dislocation of costal cartilages								1	1
Fracture of ribs	1	3	3	1				3	7
Wound of parietes of chest		2	1			1		1	3
Contusion of back		3	1	2				7	10
Sprain of back		8	4	3	1			28	36
Wound of back		2	2					1	3
Contusion of abdomen	1	2		3					3
Wound of parietes of abdomen								2	2
Contusion of the pelvis								1	1
Wound of the male urethra, perinæum, scrotum, testis, or penis		1	1					1	2
Contusion of testicle								5	5
Contusion of upper extremities		6	5	1				18	24
Sprain of shoulder								3	3
Sprain of elbow		1	1						1
Sprain of wrist		3	2	1				13	16
Sprain of hand								1	1
Wound of upper extremities		19	10	8			1	48	67
Fracture of clavicle		1	1						1
Fracture of humerus		1	1						1
Fracture of bones of forearm—									
Radius		4	3	1				1	5
Ulna		1		1				5	6
Fracture of carpus, metacarpus, or phalanges		1	1					4	5
Dislocation of clavicle		1	1						1
Dislocation of phalanges of fingers		1	1						1
Contusion of lower extremities		15	10	5				20	35
Sprain of hip								1	1
Sprain of knee		2	1	1				4	6
Sprain of ankle		9	9					19	28
Wound of lower extremities	1	20	14	3	1	1	2	28	49
Fracture of femur		3	1			1	1		3
Fracture of tibia		1	1						1
Fracture of fibula		1	1						1
Fracture of tibia and fibula		1	1					1	2
Fracture of bones of foot—Of the metatarsus		1			1				1
Dislocation of patella		1		1					1
Dislocation of tibia		1	1					1	2
Dislocation of ankle		1	1						1
Dislocation of foot		1	1						1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

GREAT LAKES.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
TOTAL CASES	**187**	**2,336**	**1,528**	**704**	**62**	**58**	**126**	**9,805**	**12,278**
General Diseases	**48**	**818**	**544**	**248**	**24**	**16**	**84**	**3,831**	**4,697**
Smallpox	......	12	5	......	6	....	1	4	16
Cowpox	......	1	......	1	......	....	......	403	404
Chicken pox	......	......	......	......	......	....	......	2	2
Measles	......	17	16	1	......	....	......	2	19
Influenza	......	42	37	3	......	2	......	144	186
Mumps	......	7	6	......	......	....	1	3	10
Diphtheria	......	4	4	......	......	....	......	9	13
Cerebro-spinal fever	......	1	1	......	......	....	......	......	1
Simple continued fever	......	3	......	2	......	....	1	15	18
Enteric fever	17	139	123	16	3	6	8	25	181
Choleraic diarrhœa	......	8	8	......	......	....	......	6	14
Epidemic diarrhœa	......	......	......	......	......	....	......	27	27
Dysentery	2	21	18	2	......	....	3	19	42
Malarial fever:									
Intermittent	1	54	47	5	1	....	2	112	167
Remittent	......	11	9	......	1	....	1	4	15
Phagedæna	......	......	......	......	......	....	......	1	1
Erysipelas	......	14	12	1	......	....	1	7	21
Septicæmia	......	1	1	......	......	....	......	......	1
Tubercle	13	50	......	46	6	6	5	48	111
Syphilis:									
Primary	......	7	......	6	......	....	1	65	72
Secondary	4	75	6	71	1	....	1	733	812
Gonorrhea	3	86	64	24	......	....	1	1,153	1,242
Diseases dependent on animal parasites:									
Tænia solium	......	2	2	......	......	....	......	7	9
Tænia mediocanellata	......	1	1	......	......	....	......	......	1
Ascaris lumbricoides	......	......	......	......	......	....	......	3	3
Pediculis vestimenti	......	......	......	......	......	....	......	2	2
Phthirius inguinalis	......	......	......	......	......	....	......	1	1
Phthirius versicular	......	......	......	......	......	....	......	1	1
Sarcoptes scabiei	......	......	......	......	......	....	......	20	20
Diseases dependent on vegetable parasites:									
Trichophyton tonsurans	......	2	2	......	......	....	......	3	5
Tinea versicular	......	......	......	......	......	....	......	1	1
Tinea barbæ	......	......	......	......	......	....	......	1	1
Ringworm	......	1	1	......	......	....	......	18	19
Tinea tonsurans	......	1	......	1	......	....	......	2	3
Effects of animal poisons	......	......	......	......	......	....	......	1	1
Spoiled milk	......	......	......	......	......	....	......	1	1
Effects of vegetable poisons:									
Rhus	......	......	......	......	......	....	......	2	2
Chloral	......	1	1	......	......	....	......	......	1
Effects of inorganic poisons	......	3	3	......	......	....	......	......	3
Lead	......	......	......	......	......	....	......	1	1
Iodide potassium	......	......	......	......	......	....	......	1	1
Effects of the presence of foreign bodies	......	......	......	......	......	....	......	1	1
Effects of mechanical injuries	......	1	......	1	......	....	......	1	2
Effects of heat	......	7	7	......	......	....	......	8	15
Effects of cold	......	1	1	......	......	....	......	......	1
Alcoholism	3	60	59	4	......	....	......	77	140
Rheumatic fever	2	46	25	19	1	....	3	24	72
Rheumatism	2	106	68	35	1	....	4	601	709
Gout	......	1	......	1	......	....	......	1	2
Osteoarthritis	......	2	2	......	......	....	......	......	2
Cyst:									
Mucous	......	1	......	......	1	....	......	6	7
Sebaceous	......	1	1	......	......	....	......	4	5
Meibomian	......	......	......	......	......	....	......	2	2
New growth, nonmalignant:									
Lipoma	......	2	2	......	......	....	......	1	3
Fibroma	......	......	......	......	......	....	......	1	1
Chondroma	......	1	......	1	......	....	......	......	1
Tumor	......	1	......	......	1	....	......	......	1
Polypus	......	......	......	......	......	....	......	2	2
Papilloma	......	1	1	......	......	....	......	44	45
Pterygium	......	2	1	1	......	....	......	8	5
Condyloma penies	......	......	......	......	......	....	......	5	5

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

GREAT LAKES—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
New growth, malignant:									
Sarcoma								1	1
Epithelioma		2	1	1				1	3
Carcinoma		2	1				1	5	7
Anæmia		2		2				9	11
Idiopathic anæmia		1				1		1	2
Lycocythæmia		1			1			2	3
Diabetes mellitus	1	2		1	1	1		8	11
Diabetes insipidus		1		1				2	3
Debility		10	8	2				174	184
Local Diseases	**57**	**974**	**604**	**307**	**32**	**33**	**55**	**4,935**	**5,966**
DISEASES OF THE NERVOUS SYSTEM	15	66	21	35	6	9	10	258	339
Of the nerves—Multiple neuritis		5	3	2				2	7
Of the spinal cord and membranes—Membranes—									
Inflammation—Of dura mater	1				1				1
Of the spinal cord and membranes—Cord—									
Inflammation—Local								1	1
Degeneration—									
Of anterior cornua		2		2					2
Of lateral columns		2		2					2
Of posterior columns	5	6		4		2	5	9	20
Acute ascending paralysis		1			1				1
Of the brain and its membranes—Membranes—									
Hæmorrhage		2		1			1	1	3
Of the brain and its membranes—Brain—									
Sclerosis	1			1					1
Hæmorrhage	1						1		1
Anæmia		1		1					1
Functional nervous disorders with other diseases of undetermined nature—									
Apoplexy	1	1		1		1		2	4
Paralysis—									
Associated nuclear		1				1			1
Paraplegia		3		1		2			3
Hemiplegia	4	3	1	4		1	1	5	12
Bulbar paralysis		1		1					1
Local paralysis		3		1	2			11	14
Incomplete paralysis								1	1
Tremor								1	1
Bed sore								2	2
Chorea		1		1					1
Spasm								10	10
Torticollis								3	3
Epilepsy		3		1	1		1	12	15
Vertigo		2	2					3	5
Headache		1	1					22	23
Neuralgia	1	19	13	7				137	157
Hysteria		1	1						1
Hiccough		1		1				2	3
Nervous weakness	1	1		2				31	33
Mental diseases—									
Mania		1				1			1
Melancholia		4		2	1		1	3	7
General paralysis of the insane		1				1			1
DISEASES OF THE EYE	1	14	6	7	1		1	116	131
Conjunctivitis		7	4	3				78	85
Keratitis								2	2
Ulceration of cornea		1					1	4	5
Iritis		3	1	2				2	5
Glaucoma								1	1
Lenticular cataract	1				1			1	2
Amblyopia								3	3
Temporary blindness								1	1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

GREAT LAKES—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
DISEASES OF THE EYE—Continued.									
Ametropia								2	2
Presbyopia								1	1
Diplopia		1		1					1
Abscess lachrymal sack		1		1					1
Obstruction of nasal duct								1	1
Epiphora								3	3
Blepharitis marginalis								6	6
Sty								6	6
Œdema feyelia								1	1
Trichiasis		1	1					3	4
Entropia								1	1
DISEASES OF THE EAR		2	2					46	48
Inflammation of the external meatus—									
Acute								4	4
Abscess								4	4
Accumulation in external meatus of wax or epidermis								17	17
Inflammation of the middle ear—									
Nonsuppurative		1	1					5	6
Suppurative		1	1					11	12
Ulceration of membrana tympani								1	1
Perforation of membrana tympani								2	2
Tinnitus								1	1
Deafness								1	1
DISEASES OF THE NOSE								44	44
Inflammation of soft parts								44	44
Diseases of septum								58	58
Epistaxis								2	2
Inflammation of the naso-pharynx								56	56
DISEASES OF THE CIRCULATORY SYSTEM	6	63	8	46	4	2	9	118	187
Pericarditis		1		1					1
Endocarditis		1	1						1
Valvular disease—									
Aortic		5		3			2	5	10
Mitral	5	26		24	3		4	36	67
Aortic and mitral		4	1			2	1	5	9
Tricuspid	1	1		2					2
Degeneration of heart—Fatty		2		2				1	3
Hypertrophy of heart		7	1	4	1		1	11	18
Dilatation of heart		2		2				1	3
Angina pectoris		1		1				2	3
Disordered action of the heart—									
Abnormal slowness								1	1
Abnormal rapidity		1		1				3	4
Irregularity								16	16
Arteritis—									
Degeneration of arteries		1		1				1	2
Rupture of artery		1		1				1	2
Obstruction of vein								1	1
Endarteritis								1	1
Aneurysm of arteries		1		1				4	5
Obstruction of arteries—Thrombosis								1	1
Phlebitis		1	1					1	2
Varix		8	4	3			1	26	34
Neavus								1	1
DISEASES OF THE RESPIRATORY SYSTEM	9	153	85	49	7	12	9	980	1,142
Hay fever								3	3
Inflammation of mucous membrane of larynx—									
Catarrhal, acute		4	2	2				19	23
Catarrhal, chronic		1		1				3	4
Membranaous	1			1					1
Tracheitis, catarrhal								11	11
Bronchitis—									
Catarrhal, acute		42	25	13	2	1	1	631	673
Catarrhal, chronic	2	28	7	16	1	2	4	188	218
Dilatation of bronchi								1	1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

GREAT LAKES—Continued.

Diseases.	Number of cases								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
DISEASES OF THE RESPIRATORY SYSTEM—Continued.									
Spasmodic asthma		12	5	6			1	46	58
Congestion of lung		1	1					22	23
Hæmorrhage of lung		1	1						1
Hæmoptysis		1	1						1
Pneumonia	1	31	22	2	1	6	1	2	34
Broncho-pneumonia		1	1						1
Chronic interstitial inflammation		1		1					1
Phthisis—									
Acute		4		1	1	1	1		4
Chronic								1	1
Tubercular	1	1			1	1		6	8
Pleurisy—									
Acute	2	22	18	4	1		1	39	68
Chronic	1	3	1	2		1		8	12
Empyema	1		1						1
DISEASES OF THE DIGESTIVE SYSTEM	8	253	195	43	5	6	12	1,554	1,815
Inflammation of the lips								2	2
Ulceration of the lips								5	5
Inflammation of the mouth								10	10
Ulceration of the mouth								4	4
Hypertrophy of jaw								1	1
Caries of dentine and cementum								7	7
Absorption dentine and cementum								2	2
Abscess of dental periosteum								2	2
Inflammation of gums and alveoli								1	1
Suppuration of alveoli		1	1						1
Ulceration of gums and alveoli								8	8
Toothache								9	9
Inflammation of the tongue								1	1
Ulceration of the tongue								2	2
Sore throat								25	25
Ulceration of palate								1	1
Inflammation of the tonsils—									
Follicular		20	17	3				80	100
Suppuration		4	3	1				10	14
Hypertrophy of tonsils								4	4
Elongated uvula		1	1					1	2
Salivation								4	4
Inflammation of the pharynx—									
Catarrhal		2	1	1				31	33
Granular								1	1
Follicular								5	5
Ulceration of pharynx								1	1
Stricture of œsophagus		1					1	1	2
Inflammation of the stomach	2	42	32	9	1		2	47	91
Hæmorrhage of the stomach	1	1	1	1				1	3
Dilatation of the stomach		1		1				2	3
Indigestion		16	11	3	1		1	471	487
Eruction of gas								2	2
Pyrosis								28	28
Gastralgia								5	5
Loss of appetite								27	27
Inflammation of the intestines—									
Enteritis	1	9	10					17	27
Typhlitis	2	9	8	1		1	1	10	21
Colitis								3	3
Catarrhal		20	14	3	1	2		18	38
Hæmatemesis		1	1						1
Concretions of intestines		2	1			1			2
Hernia	1	24	18	3	1		3	102	127
Obstruction of the intestines		1	1					2	3
Intestinal dyspepsia								7	7
Constipation		4	4					214	218
Colic	1	4	5					13	18
Diarrhœa		34	30	2			2	235	269
Enteralgia		1	1						1
Inflammation of the rectum								2	2

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

GREAT LAKES—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE DIGESTIVE SYSTEM—Con.									
Periproctitis—Abscess	......	5	2	2	......	....	1	5	10
Ulceration of rectum	......	2	......	2	......	....	......	1	3
Ulceration of anus	......	......	......	......	......	....	......	2	2
Fissure of the anus	......	1	1	......	......	....	......	1	2
Fistula in ano	......	13	8	4	......	....	1	10	23
Prolapse of the rectum	......	1	1	......	......	....	......	......	1
Coloptosis	......	......	......	......	......	....	......	1	1
Piles—									
Internal	......	7	6	1	......	....	......	18	25
External	......	4	2	1	1	....	......	33	37
Mixed	......	4	3	1	......	....	......	5	9
Pruritus ani	......	......	......	......	......	....	......	13	13
Inflammation of the liver—									
Acute	......	......	......	......	......	....	......	7	7
Chronic	......	3	......	1	......	2	......	1	4
Hyperæmia of the liver	......	3	3	......	......	....	......	10	13
Jaundice	......	4	2	2	......	....	......	11	15
Inflammation of hepatic ducts and gall bladder	......	5	5	......	......	....	......	5	10
Calculi	......	......	......	......	......	....	......	1	1
Accumulatiom of bile	......	......	......	......	......	....	......	5	5
Inflammation of the peritonæum	......	3	2	1	......	....	......	......	3
Dropsy	......	......	......	......	......	....	......	1	1
DISEASES OF THE LYMPHATIC SYSTEM	4	44	32	15	......	....	1	63	111
Inflammation of lymph glands	1	31	26	5	......	....	1	52	84
Suppuration	3	13	6	10	......	....	......	7	23
Hypertrophy of lymph glands	......	......	......	......	......	....	......	2	2
Inflammation of lymphatics	......	......	......	......	......	....	......	1	1
Suppuration	......	......	......	......	......	....	......	1	1
DISEASES OF THE THYROID BODY	......	......	......	......	......	....	......	1	1
Goitre	......	......	......	......	......	....	......	1	1
DISEASES OF THE URINARY SYSTEM	......	34	17	15	1	....	1	131	165
Acute nephritis	......	7	5	1	1	....	......	14	21
Bright's disease	......	10	......	9	......	....	1	5	15
Chronic nephritis	......	1	......	1	......	....	......	2	3
Granular kidney	......	......	......	......	......	....	......	2	2
Calculus in kidney	......	1	......	1	......	....	......	1	2
Calculus in ureter	......	2	2	......	......	....	......	3	5
Nephralgia	......	1	1	......	......	....	......	......	1
Lithuria	......	......	......	......	......	....	......	1	1
Phosphaturia	......	......	......	......	......	....	......	1	1
Inflammation of bladder—									
Acute	......	9	7	2	......	....	......	61	70
Subacute	......	......	......	......	......	....	......	4	4
Chronic	......	2	1	1	......	....	......	16	18
Ileo vesicle fistula	......	1	1	......	......	....	......	4	5
Irritability of bladder	......	......	......	......	......	....	......	6	6
Retention of urine	......	......	......	......	......	....	......	4	4
Incontinence of urine	......	......	......	......	......	....	......	7	7
DISEASES OF THE GENERATIVE SYSTEM	5	144	104	39	1	2	3	545	694
Urethritis	......	......	......	......	......	....	......	6	6
Gleet	......	......	......	......	......	....	......	7	7
Hæmorrhage of the urethra	......	......	......	......	......	....	......	2	2
Stricture of urethra—Organic	1	37	20	16	......	2	......	74	112
Urethral fistula	......	2	1	1	......	....	......	......	2
Prostatarrhœa	......	......	......	......	......	....	......	2	2
Hypertrophy of the prostate	......	......	......	......	......	....	......	12	12
Posthitis	1	......	1	......	......	....	......	2	3
Hypertrophy of prepuce	......	1	1	......	......	....	......	......	1
Phimosis	......	14	14	......	......	....	......	17	31
Paraphimosis	......	3	3	......	......	....	......	1	4
Inflammation of the glans of penis	......	1	1	......	......	....	......	6	7
Ulcer of penis	1	8	6	3	......	....	......	25	34
Œdema of penis	......	......	......	......	......	....	......	1	1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

GREAT LAKES—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE GENERATIVE SYSTEM—Continued.									
Soft chancre	1	26	14	12			1	261	288
Gangrene of the scrotum		1	1						1
Abscess of the spermatic cord		1	1					1	2
Inflammation of the spermatic cord		1	1					6	7
Varicocele	1	14	10	3	1		1	22	37
Hydrocele of tunica vaginalis		6	5	1				17	23
Acute orchitis		18	16	2				33	51
Epididymitis		5	5					9	14
Abscess of testicle		1		1				1	2
Atrophy of testicle								2	2
Spermatorrhœa								10	10
Impotence								7	7
Inflammation of the fallopian tubes								2	2
Distension fallopian tubes		1					1		1
Inflammation of the uterus		2	2					8	10
Laccration of the cervix		1	1						1
Dysmenorrhœa								1	1
Metrorrhagia								3	3
Leucorrhœa								7	7
Abortion		1	1						1
DISEASES OF THE ORGANS OF LOCOMOTION.	2	65	35	22	4	2	4	321	388
Inflammation of the bones—									
Osteitis		2	2						2
Periostitis		4	4					3	7
Necrosis		6	2	2	1	1		2	8
Inflammation of joints—									
Acute synovitis	1	7	4	4				16	24
Chronic synovitis		2		2				1	3
Ankylosis		2		1	1			2	4
Loose body in joint		3		3				1	4
Suppuration of muscles		2		1	1			1	3
Muscular atrophy								6	6
Myalgia	1	20	15	5			1	190	211
Lumbago		9	5	2		1	1	66	75
Inflammation of fasciæ		1					1		1
Inflammation of tendons								6	6
Adhesion of tendons								1	1
Inflammation of sheaths of tendons								8	8
Thecal abscess		3	1	1	1			2	5
Ganglion		1	1					2	3
Inflammatien of bursæ—									
Acute								4	4
Chronic								2	2
Abscess of bursæ		1	1						1
Bunion								5	5
Bursal cyst								1	1
Bursal tumor								2	2
Flat foot		2		1			1		2
DISEASES OF THE CONNECTIVE TISSUE	3	62	45	16	2		2	146	211
Inflammation	2	33	24	10	1			56	91
Abscess	1	29	21	6	1		2	89	119
Œdema								1	1
DISEASES OF THE SKIN	4	74	54	20	1		3	554	632
Erythema		4	2	1			1	8	12
Pityriasis rosea								1	1
Urticaria								16	16
Prickly heat								4	4
Eczema		7	2	5				121	128
Impetigo		1	1					30	31
Prurigro								2	2
Psoriasis		1		1				24	25
Herpes		1	1					21	22
Zona		1	1						1
Pemphigus								2	2
Dermatitis herpetiformis								3	3

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

GREAT LAKES—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE SKIN—Continued.									
Acne	......	......	......	......	......	....	......	17	17
Gutta rosea	......	......	......	......	......	....	......	4	4
Sycosis	......	......	......	......	......	....	......	11	11
Seborrhœa	....	1	......	1	......	....	......	1	2
Chloasma	......	......	......	......	......	....	......	2	2
Sclerodermia	......	......	......	......	......	....	......	1	1
Ulcer	3	38	29	11	......	....	1	124	165
Boil	......	7	6	......	1	....	......	98	105
Carbuncle	......	8	6	1	......	....	1	18	26
Whitlow	1	3	4	......	......	....	......	23	27
Onychia	......	2	2	......	......	....	......	10	12
Corn	......	......	......	......	......	....	......	4	4
Wen	......	......	......	......	......	....	......	2	2
Pruritus	......	......	......	......	......	....	......	6	6
Lupus	......	......	......	......	......	....	......	1	1
Injuries	**32**	**544**	**375**	**149**	**6**	**9**	**37**	**1,039**	**1,615**
GENERAL INJURIES	2	47	34	10	......	3	2	89	138
Effects of heat—									
Burns and scalds	......	28	20	7	......	....	1	77	105
Heat stroke	2	11	12	1	......	....	......	8	21
Sunstroke	......	1	1	......	......	....	......	......	1
Lightning stroke	......	......	......	......	......	....	......	1	1
Multiple injury	......	6	1	1	......	3	1	2	8
Suffocation	......	1	......	1	......	....	......	......	1
Exhaustion	......	......	......	......	......	....	......	1	1
LOCAL INJURIES	30	497	341	139	6	6	35	950	1,477
Contusion of nerves	......	......	......	......	......	....	......	1	1
Contusion of muscles	......	......	......	......	......	....	......	6	6
Strain of muscles	......	3	2	1	......	....	......	4	7
Rupture of muscles	......	......	......	......	......	....	......	1	1
Strain of tendons	......	1	......	1	......	....	......	2	3
Contusion of skin	......	......	......	......	......	....	......	8	8
Abrasion of skin	......	......	......	......	......	....	......	4	4
Wound of skin	......	......	......	......	......	....	......	6	6
Burn or scald of skin	2	......	2	......	......	....	......	1	3
Frostbite	......	......	......	......	......	....	......	3	3
Effects on the skin of irritants or corrosives	......	......	......	......	......	....	......	1	1
Wound of mucous membrane	......	......	......	......	......	....	......	1	1
Burn or scald of mucous membrane	......	......	......	......	......	....	......	4	4
Contusion of scalp	......	5	3	2	......	....	......	2	7
Wound of scalp	......	13	10	3	......	....	......	39	52
With injury to the aponeurosis	......	1	......	1	......	....	......	1	2
Contusion of skull	......	1	1	......	......	....	......	1	2
Fracture of the vault of skull	......	2	......	1	......	1	......	......	2
Fracture of the base of skull	......	2	......	......	......	2	......	......	2
Concussion of brain	......	7	6	1	......	....	......	......	7
Contusion of face	......	3	2	1	......	....	......	16	19
Wound of face and mouth	......	4	2	2	......	....	......	23	27
Foreign bodies in the nose, antrum, or other cavities	......	......	......	......	......	....	......	1	1
Fracture of facial bones	......	12	8	3	......	....	1	5	17
Contusion of eyelid	......	......	......	......	......	....	......	1	1
Wound of eyelid	......	1	1	......	......	....	......	2	3
Contusion of eyeball	......	1	1	......	......	....	......	......	1
Foreign bodies in the conjunctiva or cornea	......	1	1	......	......	....	......	21	22
Foreign body in eyeball	......	1	......	1	......	....	......	2	3
Wound of eyeball	......	......	......	......	......	....	......	3	3
Wound of pinna	......	2	1	1	......	....	......	3	5
Contusion of neck	......	......	......	......	......	....	......	2	2
Wound of neck	......	1	......	1	......	....	......	1	2
Compression of chest	......	1	......	1	......	....	......	......	1
Contusion of chest	......	8	7	1	......	....	......	24	32
Fracture of ribs	......	17	10	5	1	....	1	16	33
Wound of parietes of chest	......	......	......	......	......	....	......	2	2

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

GREAT LAKES—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
LOCAL INJURIES—Continued.									
Contusion of back	1	29	20	9			1	26	56
Sprain of back	1	18	16	2			1	34	53
Wound of back		3	2	1					3
Fracture of spine		1	1						1
Compression of cord		1		1					1
Contusion of abdomen								3	3
Wound of parietes of abdomen		2	1	1				3	5
Wound of viscera		1				1			1
Wound of the male urethra, perinæum, scrotum, testis, or penis		1		1				1	2
Fracture or dislocation of pelvic bones		2	2						2
Costusion of testicle		1	1						1
Contusion of upper extremities	1	21	13	9				105	127
Sprain of shoulder		3	1	2				23	26
Sprain of elbow								4	4
Sprain of wrist		9	5	2			2	33	42
Sprain of hand								1	1
Sprain of thumb								1	1
Sprain of fingers								4	4
Wound of upper extremities	3	56	38	21				230	289
Fracture of clavicle		5	2	3					5
Fracture of scapula	1		1						1
Fracture of humerus	1	9	5	3	1		1	1	11
Fracture of bones of forearm—									
Radius	2	5	4	2			1	9	16
Ulna		8	6	1			1	7	15
Both bones		6	3	3					6
Fracture of carpus, metacarpus, or phalanges		9	4	4			1	16	25
Dislocation of clavicle								2	2
Dislocation of humerus	1	9	6	3			1	6	16
Dislocation of radius and ulna		2	2						2
Dislocation of wrist		1	1						1
Contusion of lower extremities	2	64	46	11	1		8	85	151
Sprain of hip		1	1					5	6
Sprain of knee		3	2	1				23	26
Sprain of ankle	1	51	30	15	1		6	47	99
Sprain of foot								2	2
Internal derangement of joints		1			1			1	2
Wound of lower extremities	5	37	31	7		1	3	59	101
Fracture of femur		4	2				2		4
Fracture of patella		3	1	2				2	5
Fracture of tibia	1	6	6	1				5	12
Fracture of fibula	3	6	6	2			1	1	10
Fracture of tibia and fibula	4	17	16	2		1	2		21
Fracture astragalus		1	1						1
Fracture of bones of foot		2	2						2
Of the metatarsus	1	2	2				1	2	5
Of the phalanges of the toes		3		2			1	2	5
Dislocation of tibia		3	2	1					3
Dislocation astragalus		2		1	1				2
Dislocation of foot		1	1						1
Dislocation of metatarsus and phalanges		1	1						1

PACIFIC.

Diseases.	Remaining under treatment from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
TOTAL CASES	**208**	**1,883**	**984**	**755**	**42**	**81**	**224**	**5,249**	**7,335**
General Diseases	**118**	**742**	**309**	**346**	**12**	**46**	**142**	**2,182**	**3,037**
Smallpox		1			1			3	4
Cowpox		1	1					307	308
Chicken pox								1	1
Measles		12	12					2	14
Rubella								1	1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

PACIFIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Scarlet fever	......	2	2	......	......	....	......	....	2
Plague	......	1	1	......	......	....	......	....	1
Influenza	......	24	22	2	......	....	......	72	96
Mumps	......	5	5	......	......	....	......	6	11
Diphtheria	......	5	5	......	......	....	......	1	6
Simple continued fever	......	5	5	......	......	....	......	1	6
Enteric fever	3	29	28	......	......	2	2	3	35
Choleraic diarrhœa	......	......	......	......	......	....	......	3	3
Dysentery	......	7	3	3	......	....	1	10	17
Beriberi	......	11	1	10	......	....	......	....	11
Malarial fever:									
Intermittent	1	28	18	8	......	1	2	28	57
Remittent	......	13	8	4	1	....	......	8	21
Hospital gangrene	......	1	1	......	......	....	......	....	1
Erysipelas	1	7	5	2	......	....	1	3	11
Pyæmia	......	......	......	......	......	....	......	1	1
Tubercle	85	241	17	154	7	36	112	55	381
Leprosy	......	1	......	......	1	....	......	....	1
Syphilis:									
Primary	......	5	2	3	......	....	......	58	63
Secondary	3	42	1	38	......	1	5	454	499
Gonorrhea	6	96	49	44	1	....	8	647	749
Diseases dependent on animal parasites:									
Tænia solium	......	1	1	......	......	....	......	3	4
Tænia mediocanellata	......	2	1	1	......	....	......	2	4
Oxyuris vermicularis	......	......	......	......	......	....	......	1	1
Phthirius inguinalis	......	1	1	......	......	....	......	4	5
Sarcoptes scabiei	......	3	2	1	......	....	......	45	48
Diseases dependent on vegetable parasites:									
Trichophyton tonsurans	......	......	......	......	......	....	......	14	14
Microsporon furfur	......	......	......	......	......	....	......	13	13
Tinea versicular	......	1	......	1	......	....	......	....	1
Ringworm	......	......	......	......	......	....	......	1	1
Effects of vegetable poisons—Rhus	......	......	......	......	......	....	......	1	1
Effects of inorganic poisons:									
Lead	......	1	......	1	......	....	......	....	1
Iodoform	......	1	1	......	......	....	......	....	1
Effects of the presence of foreign bodies	......	1	1	......	......	....	......	3	4
Effects of mechanical injuries	......	4	3	1	......	....	......	....	4
Effects of heat	......	2	2	......	......	....	......	2	4
Effects of chemical agents	......	......	......	......	......	....	......	4	4
Scurvy	......	2	2	......	......	....	......	4	6
Alcoholism	......	32	27	2	......	....	3	46	78
Rheumatic fever	......	30	12	17	......	....	1	4	34
Rheumatism	13	94	60	41	......	1	5	301	408
Gout	......	2	1	1	......	....	......	1	3
Osteoarthritis	1	1	......	1	......	....	1	2	4
Cyst	......	......	......	......	......	....	......	1	1
Mucous	......	......	......	......	......	....	......	2	2
Sebaceous	......	......	......	......	......	....	......	1	1
New growth, nonmalignant:									
Lipoma	......	2	2	......	......	....	......	4	6
Fibroma	......	2	1	1	......	....	......	....	2
Polypus	......	......	......	......	......	....	......	2	2
Papilloma	......	3	1	2	......	....	......	24	27
Pterygium	......	1	......	1	......	....	......	1	2
Carcinoma	......	1	......	......	......	1	......	....	1
Epithelioma	......	1	......	......	......	1	......	....	1
Squamous carcinoma	......	2	1	......	......	1	......	....	2
Anæmia	......	5	......	4	......	1	......	7	12
Idiopathic anæmia	......	......	......	......	......	....	......	1	1
Purpura	......	1	1	......	......	....	......	....	1
Hodgkin's disease	......	......	......	......	......	....	......	1	1
Diabetes mellitus	......	2	......	2	......	....	......	....	2
Congenital malformations	......	2	1	......	1	....	......	1	3
Debility	......	5	2	1	......	1	1	22	27

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

PACIFIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
Local Diseases	**63**	**720**	**408**	**278**	**26**	**29**	**47**	**2,174**	**2,957**
DISEASES OF THE NERVOUS SYTEM	6	69	17	32	7	3	16	101	176
Of the nerves—									
Neuritis		13	8	4			1	5	18
Multiple neuritis		2	2					1	3
Of the spinal cord and membranes—									
Cord—									
Degeneration—									
Of anterior cornua		1					1	1	2
Of lateral columns		3		2			1		3
Of posterior columns	3	6		6	1		2	1	10
Of the brain and its membranes—									
Brain—									
Sclerosis								1	1
Hemorrhage	2	2		2			2		4
Functional nervous disorders with other diseases of undetermined nature—									
Paralysis		1		1					1
Paraplegia		2			1	1			2
Hemiplegia		4		3			1	1	5
Local paralysis		4		3	1			5	9
Incomplete paralysis	1				1				1
Spasm		1	1						1
Epilepsy		3		2		1		4	7
Vertigo								1	1
Headache		1		1				20	21
Hyperæsthesia								3	3
Neuralgia		7	2	4			1	42	49
Hiccough		2	2					2	4
Hysteria								2	2
Nervous weakness		2		1			1	9	11
Mental diseases—									
Mania—Acute		3	1				2	1	4
Melancholia		6	1	2	2		1	1	7
Dementia		1				1		1	2
Delusional insanity		5		1	1		3		5
DISEASES OF THE EYE	1	14	4	7	3		1	40	55
Conjunctivitis		1	1					29	30
Keratitis		2	1		1			2	4
Ulceration of cornea		2		2				1	3
Opacity of cornea		1		1					1
Iritis		5	1	3			1	3	8
Degeneration of conjunctiva		1	1						1
Atrophy and degeneration of optic nerve or papilla	1				1				1
Lenticular cataract		1		1					1
Blepharitis marginalis								2	2
Sty								1	1
Entropian								1	1
Ptosis		1			1			1	2
DISEASES OF THE EAR	1	9	2	7	1			52	62
Inflammation of the external meatus—									
Acute		2	1	1				4	6
Abscess								3	3
Hæmatoma of the auricle								1	1
Accumulation in external meatus of wax or epidermis								19	19
Inflammation of the middle ear—									
Nonsuppurative		6	1	5				9	15
Suppurative	1				1			10	11
Perforation of membrana tympani		1		1				3	4
Deafness								3	3
DISEASES OF THE NOSE								23	23
Inflammation of soft parts								23	23
Diseases of septum		3	1	2				6	9

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

PACIFIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
DISEASES OF THE NOSE—Continued.									
Inflammation of the accessory sinuses		2	1	1				1	3
Inflammation of the naso-pharynx		1		1				5	6
DISEASES OF THE CIRCULATORY SYSTEM	6	75	32	36	3	7	3	60	141
Endocarditis		2		1		1			2
Valvular disease—									
Aortic		5		3		1	1	6	11
Mitral	2	22	14	3	2	5		31	55
Aortic and mitral		9	1	7			1		9
Tricuspid								1	1
Degeneration of heart—Fatty		2		2				3	5
Hypertrophy of heart		1		1				1	2
Dilatation of heart		1		1				2	3
Angina pectoris		1		1				1	2
Disordered action of the heart—									
Abnormal rapidity								7	7
Irregularity								5	5
Aneurism of arteries		9		8	1				9
Varix	3	23	17	8			1		26
Obstruction of vein								2	2
Endarthritis defermans	1			1					1
Raynaud's disease								1	1
DISEASES OF THE RESPIRATORY SYSTEM	8	102	73	25	1	8	3	400	510
Inflammation of mucous membrane of larynx—									
Catarrhal, acute								5	5
Catarrhal, chronic								1	1
Tracheitis								1	1
Bronchitis—									
Catarrhal, acute		44	37	6	1			300	344
Catarrhal, chronic	1	4	1	4				36	41
Membranous								1	1
Spasmodic asthma		5		5				5	10
Congestion of lung		1	1					1	2
Hæmorrhage of lung		1		1					1
Hæmoptysis								2	2
Pneumonia	4	39	27	6		7	3	3	46
Broncho-pneumonia								1	1
Phthisis—									
Acute	1			1					1
Chronic								1	1
Emphysema								2	2
Pleurisy—									
Acute	1	6	6			1		14	21
Chronic								2	2
Empyema	1	1	1	1				4	6
Adhesions of pleura		1		1				21	22
DISEASES OF THE DIGESTIVE SYSTEM	7	156	95	53	3	5	7	593	756
Inflammation of the lips								1	1
Ulceration of the mouth								4	4
Caries of dentine and cementum		3	3					22	25
Inflammation of the dental periosteum	1		1						1
Abcess of dental periosteum		4	1	2			1	6	10
Inflammation of gums and alveoli		2	1	1				2	4
Suppuration of alveoli								2	2
Toothache								1	1
Inflammation of the tongue								2	2
Ulceration of the tongue								2	2
Sore throat		3		3				47	50
Ulceration of tonsil								1	1
Inflammation of the tonsils—									
Follicular	1	13	12	2				51	65
Suppuration		4	3	1				3	7
Hypertrophy of tonsils		1		1				3	4
Inflammation of salivary glands								1	1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

PACIFIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
DISEASES OF THE DIGESTIVE SYSTEM—Con.									
Inflammation of the pharynx—									
Catarrhal	......	1	......	1	......	...	......	5	6
Granular	......	......	......	......	......	...	......	2	2
Inflammation of the stomach—Catarrhal	......	13	8	4	1	...	......	27	40
Indigestion	......	13	5	5	......	...	3	120	133
Vomiting	......	1	1	......	......	...	......	2	3
Gastralgia	......	2	......	2	......	...	......	3	5
Inflammation of the intestines—									
Enteritis	......	2	1	1	......	...	......	1	3
Typhlitis	......	9	6	2	......	1	......	3	12
Colitis	......	2	......	2	......	...	......	......	2
Catarrhal	......	8	6	2	......	...	......	2	10
Ulceration of the intestines	1	......	......	1	......	...	......	......	1
Hernia	2	23	18	6	......	1	......	53	78
Obstruction of the intestines	......	2	......	1	......	1	......	......	2
Constipation	......	4	3	......	......	...	1	125	129
Colic	......	2	1	1	......	...	......	3	5
Diarrhœa	......	5	3	2	......	...	......	46	51
Enteralgia	......	......	......	......	......	...	......	1	1
Periproctitis—									
Abscess	......	1	1	......	......	...	......	4	5
Ulceration of rectum and anus	......	1	......	1	......	...	......	......	1
Fissure of the anus	......	3	1	2	......	...	......	......	3
Fistula in ano	......	6	5	1	......	...	......	4	10
Prolapse of the rectum	......	2	......	1	1	...	......	1	3
Piles—									
Internal	......	4	3	1	......	...	......	4	8
External	1	2	3	......	......	...	......	12	15
Mixed	......	8	3	2	1	...	2	5	13
Pruritus ani	......	......	......	......	......	...	......	2	2
Inflammation of the liver—									
Acute	1	2	......	2	......	...	......	1	4
Chronic	......	1	......	......	......	1	......	1	2
Hyperæmia of the liver	......	2	2	......	......	...	......	2	4
Hypertrophy of the liver	......	......	......	......	......	...	......	1	1
Jaundice	......	2	1	1	......	...	......	3	5
Inflammation of hepatic ducts and gall bladder	......	3	3	......	......	...	......	2	5
Calculi	......	1	......	1	......	...	......	4	5
Accumulation of bile	......	......	......	......	......	...	......	4	4
Biliary colic	......	......	......	......	......	...	......	2	2
Inflammation of the peritonæum	......	1	......	1	......	...	......	......	1
DISEASES OF THE LYMPHATIC SYSTEM:	2	29	24	6	......	...	1	49	80
Perisplenitis	......	1	1	......	......	...	......	......	1
Inflammation of lymph glands	2	21	21	2	......	...	......	39	62
Suppuration	......	6	2	3	......	...	1	5	11
Hypertrophy of lymph glands	......	1	......	1	......	...	......	5	6
DISEASES OF THE URINARY SYSTEM	2	39	9	26	1	3	2	54	95
Acute nephritis	......	2	1	1	......	...	......	2	4
Bright's disease	......	15	......	14	......	...	1	15	30
Chronic nephritis	......	6	......	4	......	2	......	4	10
Granular kidney	......	2	......	2	......	...	......	......	2
Abscess—Pyelitis	1	2	......	2	1	...	......	......	3
Calculus in ureter	......	1	1	......	......	...	......	1	2
Suppression of urine	......	1	......	......	......	1	......	......	1
Hæmaturia	......	......	......	......	......	...	......	1	1
Lithuria	......	......	......	......	......	...	......	3	3
Inflammation of bladder—									
Acute	......	8	6	2	......	...	......	22	30
Subacute	1	......	1	......	......	...	......	......	1
Chronic	......	2	......	1	......	...	1	2	4
Irritability of bladder	......	......	......	......	......	...	......	2	2
Retention of urine	......	......	......	......	......	...	......	1	1
Incontinence of urine	......	......	......	......	......	...	......	1	1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

PACIFIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE GENERATIVE SYSTEM	11	72	45	31	1	....	6	280	343
Urethritis								2	2
Stricture of urethra—Organic	1	19	5	10		....	5	48	68
Urethral fistula		1	1						1
Inflammation of the prostate—Chronic								1	1
Hypertrophy of the prostate		3		3				3	6
Posthitis		1		1					1
Phimosis		4	2	2				2	6
Paraphimosis		4	3	1				5	9
Inflammation of the penis								1	1
Of the glans		2	1			....	1	9	11
Ulcer of penis		3	1	2				35	35
Œdema of penis								1	1
Soft chancre	7	16	18	5				108	126
Abscess of the scrotum								1	1
Hydrocele of the spermatic cord		3	3						3
Varicocele	1	5	5	1				16	22
Hyrocele of tunica vaginalis	1	4	3	2				1	6
Acute orchitis		6	3	3				14	20
Chronic orchitis	1			1				2	3
Epididymitis		1			1			10	11
Spermatorrhœa								3	3
Impotence								3	3
DISEASES OF THE ORGANS OF LOCOMOTION	4	41	24	12	3	2	4	125	170
Inflammation of the bones—									
Osteitis		2	1			....	1		2
Periostitis		2	1	1				5	7
Caries								1	1
Necrosis		4	1	1	2			2	6
Chronic abscess		1	1						1
Acromegaly	1					1			1
Inflammation of joints—									
Acute synovitis	1	3	2	2				7	11
Chronic synovitis								1	1
Ankylosis	1	1		1			1	1	3
Dislocation of articular cartilage		1		1					1
Posterior curvature of spine		1				1			1
Posterior curvature of spine, angular	1			1					1
Myalgia		8	6	1			1	71	79
Lumbago		6	5				1	24	30
Contracture of fasciæ								2	2
Inflammation of tendons								3	3
Adhesion of tendons		1			1				1
Contraction of tendons		1		1					1
Inflammation of sheaths of tendons								3	3
Thecal abscess		1		1				1	2
Inflammation of bursæ—									
Acute		4	4					2	6
Chronic		4	3	1				1	5
Flat foot		1		1				1	2
DISEASES OF THE CONNECTIVE TISSUE	7	42	35	10	2	1	1	88	137
Inflammation	2	20	16	8	1	1	1	30	52
Abscess	4	22	18	7	1			56	84
Œdema	1		1						1
DISEASES OF THE SKIN	8	69	42	31	1	....	3	323	400
Erythema		1	1					5	6
Pityriasis rosea		1	1						1
Urticaria	1	1	1	1				6	8
Prickly heat								2	2
Eczema	1	7	5	3				34	42
Impetigo		1		1				6	7
Pityriasis rubra		1		1				1	2
Lichen		1		1				3	4
Psoriasis								14	14
Herpes		3	2	1				16	19
Zona	1	2		3				5	8
Pemphigus		1	1					3	4

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

PACIFIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
DISEASES OF THE SKIN—Continued.									
Dermatitis herpetiformis								1	1
Acne								7	7
Gutta rosea								1	1
Sycosis		1		1				5	6
Seborrhœa								3	3
Sclerodermia		1		1					1
Alopecia								1	1
Chilblain								1	1
Ulcer	5	26	14	14			3	90	121
Cicatrices		2	1		1				2
Boil		12	9	3				80	92
Carbuncle		3	3					15	18
Whitlow		4	3	1				16	20
Onychia								1	1
Tylosis								2	2
Cheloid		1	1						1
Wen								3	3
Bromidrosia								1	1
Pruritus								1	1
Injuries	**27**	**421**	**272**	**131**	**4**	**6**	**35**	**893**	**1,341**
GENERAL INJURIES		28	18	6		2	2	41	69
Effects of heat—Burns and scalds		14	8	4		1	1	36	50
Effects of chemical irritants and corrosives		1		1					1
Multiple injury		12	9	1		1	1	4	16
Suffocation		1	1						1
Shock								1	1
LOCAL INJURIES	27	393	254	125	4	4	33	852	1,272
Contusion of nerves	1	1		1		1			2
Compression of nerves		1	1						1
Strain of muscles		1	1					5	6
Rupture of tendons								1	1
Abrasion of skin		1	1					2	3
Burn or scald of skin		1					1		1
Frostbite		1		1				1	2
Effects on the skin of irritants or corrosives								1	1
Effects on the mucous membrane of irritants or corrosives								1	1
Wound of scalp		12	6	6				49	61
With injury to the aponeurosis		1	1					2	3
With injury to the pericranium		2		2					2
Contusion of skull		1	1					2	3
Fracture of the vault of skull		3		2		1			3
Fracture of the base of skull		1	1						1
Concussion of brain		6	2	4				1	7
Contusion of face		6	3	3				5	11
Wound of face and mouth		4	3	1				32	36
Fracture of facial bones		10	6	1			3	7	17
Dislocation of nasal cartilages		1		1					1
Contusion of eyelid								11	11
Wound of eyelid		2	2					6	8
Subconjunctival hemorrhage								2	2
Contusion of eyeball		1			1			3	4
Foreign bodies in the conjunctiva or cornea		1	1					11	12
Foreign body in eyeball								1	1
Wound of eyeball		2	1	1					2
Wound of pinna								1	1
Wound of membrana tympani								1	1
Contusion of neck		1	1					1	2
Wound of neck		3	2			1		4	7
Contusion of chest	1	16	15	2				34	51
Dislocation of costal cartilages								1	1
Fracture of ribs		11	5	5			1	6	17
Fracture of sternum		1	1						1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

PACIFIC—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
LOCAL INJURIES—Continued.									
Contusion of back	1	9	6	3			1	20	30
Sprain of back		4	1	1	1		1	25	29
Wound of back		2	2					1	3
Concussion of cord		1	1					1	2
Contusion of abdomen		2	2					2	4
Wound of parieties of abdomen		1	1						1
Contusion of the perinæum, scrotum, or penis								1	1
Fracture or dislocation of pelvic bones		1	1						1
Contusion of testicle		2		2				7	9
Contusion of upper extremities		19	11	6			2	72	91
Sprain of shoulder		1		1				14	15
Sprain of elbow								2	2
Sprain of wrist		5	1	4				29	34
Sprain of hand								7	7
Sprain of thumb								1	1
Sprain of fingers								2	2
Sprain of metacarpophalangeal		1					1		1
Wound of upper extremities	7	43	36	12	1		1	238	288
Fracture of clavicle	1	7	7	1				5	13
Fracture of scapula		1	1						1
Fracture of humerus	1	4	3	2				2	7
Fracture of bones of forearm—									
Radius		3	1	1				4	7
Fracture of radius and alcoholism		1				1	1		1
Ulna		5	3	1			1	2	7
Both bones								2	2
Fracture of carpus, metacarpus, or phalanges		4	2	2				14	18
Dislocation of clavicle		1	1						1
Dislocation of humerus		5	4	1				7	12
Dislocation of radius and ulna		1		1					1
Contusion of lower extremities		61	41	15			5	87	148
Sprain of hip								2	2
Sprain of knee	1	5	3	1			2	18	24
Sprain of ankle	1	29	18	11			1	34	64
Sprain of foot		1		1				4	5
Internal derangement of joints								2	2
Wound of lower extremities	8	35	22	16				48	86
Wound of joint, lower extremities	1		1						1
Fracture of femur	8	7	6	2			2		10
Fracture of cervix femoris	1						1		1
Fracture of patella		1		1					1
Fracture of tibia	2	2	2	1			1	5	9
Fracture of fibula	1	10	7	2			2		11
Fracture of tibia and fibula	1	19	10	5	1		4	1	21
Fracture of bones of foot	1		1						1
Of the metatarsus		3	3						3
Of the phalanges of the toes		2	2					1	3
Dislocation of femur		2		1			1		2
Dislocation of foot		1					1		1
Dislocation of metatarsus and phalanges		1		1				1	2

QUARANTINE.

TOTAL CASES	1	32	22	9		2		19	52
General Diseases	1	25	18	6		2		4	30
Smallpox	1	14	15						15
Enteric fever		1	1						1
Beriberi		7		5		2			7
Malarial fever—Remittent		1	1						1
Tubercle		1		1					1
Syphilis:									
Primary								1	1
Secondary								2	2

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1902—Continued.

QUARANTINE—Continued.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Exanthum produced by antifest serum	......	1	1	......	......	...	......	......	1
Alcoholism	......	......	......	......	......	...	......	1	1
Local Diseases	......	6	3	3	......	...	......	11	17
DISEASES OF THE RESPIRATORY SYSTEM	......	1	1	......	......	...	......	2	3
Bronchitis—Catarrhal, acute	......	......	......	......	......	...	......	2	2
Broncho-pneumonia	......	1	1	......	......	...	......	......	1
DISEASES OF THE DIGESTIVE SYSTEM	......	2	1	1	......	...	......	1	3
Ulceration of the lips	......	......	......	......	......	...	......	1	1
Indigestion	......	1	1	......	......	...	......	......	1
Fistula in ano	......	1	......	1	......	...	......	......	1
DISEASES OF THE LYMPHATIC SYSTEM	......	2	......	2	......	...	......	1	3
Inflammation of lymph glands	......	2	......	2	......	...	......	......	2
Suppuration	......	......	......	......	......	...	......	1	1
DISEASES OF THE URINARY SYSTEM	......	......	......	......	......	...	......	2	2
Inflammation of bladder—Subacute	......	......	......	......	......	...	......	2	2
DISEASES OF THE GENERATIVE SYSTEM	......	1	1	......	......	...	......	......	1
Phimosis	......	1	1	......	......	...	......	......	1
DISEASES OF THE CONNECTIVE TISSUE	......	......	......	......	......	...	......	1	1
Abscess	......	......	......	......	......	...	......	1	1
DISEASES OF THE SKIN	......	......	......	......	......	...	......	4	4
Erythema	......	......	......	......	......	...	......	1	1
Herpes	......	......	......	......	......	...	......	1	1
Ulcer	......	......	......	......	......	...	......	2	2
Injuries	......	1	1	......	......	...	......	4	5
LOCAL INJURIES	......	1	1	......	......	...	......	4	5
Fracture of the vault of skull	......	......	......	......	......	...	......	1	1
Contusion of upper extremities	......	......	......	......	......	...	......	1	1
Wound of upper extremities	......	1	1	......	......	...	......	2	3

TABLE VIII.—TABULATED STATEMENT, BY DISTRICTS, OF CAUSES OF MORTALITY AMONG PATIENTS OF THE SERVICE DURING THE YEAR ENDED JUNE 30, 1902.

Cause of death.	Total.	Districts.								
		North Atlantic.	Middle Atlantic.	South Atlantic.	The Gulf.	The Ohio.	The Mississippi.	The Great Lakes.	The Pacific.	Quarantine stations.
Total Deaths from all Causes	384	37	55	52	45	26	28	58	81	2
FROM DISEASES	355	33	55	50	41	25	24	50	75	2
FROM INJURIES	29	4	......	2	4	1	4	8	6	.....
General Diseases	169	14	34	31	12	7	7	16	46	2
Smallpox	1	1	......	......	......	......	......	......	......	.....
Measles	1	......	......	1	......	......	......	......	......	.....
Influenza	4	......	......	2	......	......	......	2	......	.....
Diphtheria	1	......	......	......	1	......	......	......	......	.....

TABLE VIII.—TABULATED STATEMENT, BY DISTRICTS, OF CAUSES OF MORTALITY AMONG PATIENTS OF THE SERVICE DURING THE YEAR ENDED JUNE 30, 1902—Cont'd.

Cause of death.	Total.	Districts.								
		North Atlantic.	Middle Atlantic.	South Atlantic.	The Gulf.	The Ohio.	The Mississippi.	The Great Lakes.	The Pacific.	Quarantine stations.
Enteric fever	25	3	4	6	2	1	1	6	2	
Dysentery	2			1			1			
Beriberi	2									2
Malarial fever:										
Intermittent	9		2	3	2	1			1	
Remittent	4		3	1						
Pyæmia	1			1						
Septicæmia	1			1						
Tetanus	1			1						
Tubercle	97	7	23	14	2	5	4	6	36	
Syphilis:										
Primary	1	1								
Secondary	3		1		1				1	
Rheumatism	2		1						1	
Sarcoma	1						1			
Carcinoma	4	2			1				1	
Epithelioma	1								1	
Squamous carcinoma	1								1	
Anæmia	1								1	
Idiopathic anæmia	1							1		
Diabetes mellitus	3				2			1		
Debility	2				1				1	
Local Diseases	**186**	**19**	**21**	**19**	**29**	**18**	**17**	**34**	**29**	
DISEASES OF THE NERVOUS SYSTEM	28	4	2	2	3	4		10	3	
Multiple neuritis	1		1							
Degeneration—										
Of lateral columns	1	1								
Of posterior columns	2							2		
Of lateral and posterior columns	1							1		
Inflammation of the brain	1	1								
Hemorrhage of the brain	1	1								
Apoplexy	2	1						1		
Paralysis	2					1		1		
Paraplegia	3							2	1	
Hemiplegia	3					2		1		
Epilepsy	1								1	
Neuralgia	1					1				
Mania, acute	1							1		
Mania, chronic	1				1					
Dementia	4			2	1				1	
General paralysis of the insane	2		1					1		
Mental stupor	1				1					
DISEASES OF THE CIRCULATORY SYSTEM	47	3	9	7	11	2	6	2	7	
Pericarditis	1				1					
Endocarditis	3		2						1	
Valvular disease—										
Aortic	6	1	2	2					1	
Mitral	20	2	2	4	4		3		5	
Aortic and mitral	11		1	1	4	1	2	2		
Mitral and tricuspid	1						1			
Fatty degeneration of heart	1		1							
Aneurism of the arteries	3		1		1	1				
Embolism	1				1					
DISEASES OF THE RESPIRATORY SYSTEM	52	4	6	5	5	6	6	12	8	
Bronchitis—										
Catarrhal, acute	2				1			1		
Catarrhal, chronic	4		1				1	2		
Congestion of the lungs	1			1						
Pneumonia	36	3	3	4	3	6	4	6	7	
Broncho-pneumonia	1				1					
Phthisis—										
Acute	2							1	1	
Chronic	2		2							
Tubercular	2	1						1		
Pleurisy—										
Acute	1						1			
Chronic	1							1		

TABLE VIII.—TABULATED STATEMENT, BY DISTRICTS, OF CAUSES OF MORTALITY AMONG PATIENTS OF THE SERVICE DURING THE YEAR ENDED JUNE 30, 1902—Cont'd.

Cause of death.	Total.	Districts.								
		North Atlantic.	Middle Atlantic.	South Atlantic.	The Gulf.	The Ohio.	The Mississippi.	The Great Lakes.	The Pacific.	Quarantine stations.
DISEASES OF THE DIGESTIVE SYSTEM	29	3	.....	1	6	4	4	6	5	.....
Inflammation of the stomach	4	.....	.....	.....	2	2	.....	.....	.....	.....
Inflammation of the intestines—										
Typhlitis	6	2	.....	.....	1	1	.....	1	1	.....
Catarrhal	4	.....	.....	1	1	.....	.....	2	.....	.....
Concretions of intestines	1	.....	.....	.....	.....	.....	.....	1	.....	.....
Hernia	1	.....	.....	.....	.....	.....	.....	.....	1	.....
Obstruction of the intestines	1	.....	.....	.....	.....	.....	.....	.....	1	.....
Diarrhea	1	.....	.....	.....	.....	.....	1	.....	.....	.....
Inflammation of the liver—										
Acute	2	.....	.....	.....	.....	.....	1	.....	1	.....
Chronic	7	1	.....	.....	1	.....	2	2	1	.....
Inflammation of hepatic ducts and gall bladder	1	.....	.....	.....	.....	1	.....	.....	.....	.....
Inflammation of the peritoneum	1	.....	.....	.....	1	.....	.....	.....	.....	.....
DISEASES OF THE URINARY SYSTEM	19	3	2	4	4	2	1	.....	3	.....
Acute nephritis	4	.....	2	.....	1	1	.....	.....	.....	.....
Bright's disease	4	2	.....	2	.....	.....	.....	.....	.....	.....
Chronic nephritis	7	.....	.....	2	2	.....	1	.....	2	.....
Granular kidney	1	.....	.....	.....	1	.....	.....	.....	.....	.....
Pyonephrasis	1	.....	.....	.....	.....	1	.....	.....	.....	.....
Suppression of urine	1	.....	.....	.....	.....	.....	.....	.....	1	.....
Inflammation of the bladder	1	1	.....	.....	.....	.....	.....	.....	.....	.....
DISEASES OF THE GENERATIVE SYSTEM	2	.....	.....	.....	.....	.....	.....	2	.....	.....
Stricture of the urethra—Organic	2	.....	.....	.....	.....	.....	.....	2	.....	.....
DISEASES OF THE ORGANS OF LOCOMOTION	5	.....	.....	.....	.....	.....	.....	2	3	.....
Necrosis	2	.....	.....	.....	.....	.....	.....	1	1	.....
Acromegaly	1	.....	.....	.....	.....	.....	.....	.....	1	.....
Posterior curvature of the spine	1	.....	.....	.....	.....	.....	.....	.....	1	.....
Lumbago	1	.....	.....	.....	.....	.....	.....	1	.....	.....
DISEASES OF THE SKIN	4	2	2	.....	.....	.....	.....	.....	.....	.....
Ulcer	2	1	1	.....	.....	.....	.....	.....	.....	.....
Boil	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Carbuncle	1	.....	1	.....	.....	.....	.....	.....	.....	.....
Injuries	**29**	**4**	.....	**2**	**4**	**1**	**4**	**8**	**6**	.....
GENERAL INJURIES	5	.....	.....	.....	.....	.....	.....	3	2	.....
Burns and scalds	1	.....	.....	.....	.....	.....	.....	.....	1	.....
Multiple injury	4	.....	.....	.....	.....	.....	.....	3	1	.....
LOCAL INJURIES	24	4	.....	2	4	1	4	5	4	.....
Compression of nerves	1	.....	.....	.....	.....	.....	.....	.....	1	.....
Fracture of vault of the skull	4	1	.....	1	.....	.....	.....	1	1	.....
Fracture of base of the skull	3	.....	.....	.....	1	.....	.....	2	.....	.....
Wound of neck	2	.....	.....	.....	.....	.....	1	.....	1	.....
Contusion of chest	1	.....	.....	1	.....	.....	.....	.....	.....	.....
Wound of parietes of the chest	1	.....	.....	.....	.....	.....	1	.....	.....	.....
Fracture of the spine	1	.....	.....	.....	1	.....	.....	.....	.....	.....
Concussion of cord	1	.....	.....	.....	.....	.....	.....	1	.....	.....
Wound of viscera	1	.....	.....	.....	.....	.....	.....	1	.....	.....
Wound of liver	1	.....	.....	.....	1	.....	.....	.....	.....	.....
Contusion of upper extremities	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Wound of upper extremities	1	.....	.....	.....	1	.....	.....	.....	.....	.....
Fracture of radius	1	.....	.....	.....	.....	.....	.....	.....	1	.....
Wound of lower extremities	1	.....	.....	.....	.....	.....	1	.....	.....	.....
Fracture of femur	2	.....	.....	.....	.....	1	1	.....	.....	.....
Dislocation of femur	2	2	.....	.....	.....	.....	.....	.....	.....	.....

Table IX.—Surgical Operations, Fiscal Year 1902.

Operations.	No. of cases.	Remarks.
Total number of operations	**1,178**	
Operations on Tumors	25	
Lipoma	4	Chest, 1.
Fibroma	3	Scrotum, 1; thumb, 1.
Chondroma	1	
Osteoma	1	
New growth, nonmalignant	6	Chest, 1; axilla, 1; buttock, 1; hand, 1.
Papilloma	4	Penis, 1; hand, 1.
Carcinoma	2	Breast, 1; lip, 1.
Sarcoma	1	
Epithelioma	3	Lip, 2; face, 1.
Operations on Cysts	13	
Sebacious cysts	8	
Bursal cysts	4	Knee, 1.
Blood cysts	1	Do.
Evacuation of Abscesses:		
By free incision and drainage	87	
Abscess of—		
Face	4	
Neck	2	
Dental periosteum	2	
Axilla	4	
Arm	1	
Forearm	2	
Hand	10	
Palm	2	
Finger	10	
Perinephritic	1	
Pelvis	1	
Ischio-rectal	7	
Perineum	1	
Periurethral	1	
Thigh	1	
Leg	5	
Muscles	2	Of abdomen, 2.
Connective tissue	1	Arm, 1.
Appendictomy	26	Deaths, 2.
Abscess, urinary	4	
Removal of Foreign Bodies	5	
From—		
Hand	1	Splinter, 1.
Groin	3	Silver wire.
Knee	1	
Ligation of Arteries	1	
Ligation brachial artery	1	
Operations on Veins	28	
Obliteration of varices of leg	4	
Excision of varices—		
Of leg	21	
Of internal saphenous vein	2	
Of external saphenous vein	1	
Operations on the Lymphatic Glands	244	
Removal of entire gland—Glands of the groin, suppurating.	127	
Incision and evacuation of inflamed and suppurating glands of—		
Submaxillary	1	
Neck	3	
Axilla	3	
Groin	110	
Operations on the Skin and Subcutaneous Tissues.	56	
Ulcer of leg	3	Curetted, 3.
Ulcer of penis, phagadenic	2	Actual cautery, 2.
Skin grafting	18	Ulcer, 6; burn, 2.
Ingrowing toe nails	3	Evulsed, 1; enucleated, 2.
Incised wound	10	Scalp, 5; knee, 1; face, 1; abdomen, 1; arm, 1; neck, 1.

TABLE IX.—SURGICAL OPERATIONS, FISCAL YEAR 1902—Continued.

Operations.	No. of cases.	Remarks.
OPERATIONS ON THE SKIN AND SUBCUTANEOUS TISSUES—Continued.		
Rhinoplasty	1	
Boils	7	Incised, 7.
Lacerated wound—		
Of scalp	3	
Of hand	1	
Of foot	3	Amputation, 1; death, 1.
Gunshot wound	4	Arm, 1; neck, 1 (death); chest, 1; intestines, 1.
Suture of tendons	1	Tendo Achillis.
OPERATIONS ON BONES	42	
Incision of periosteum	1	
Excision metatarsal bones	5	Necrosis, 2; caries, 3.
Removal of fragments of bones—		
Superior maxilla	4	Excision, 1; death, 1.
Frontal	3	
Humerus	2	
Radius	2	
Phalanges of hand	4	Necrosis, 4.
Femur	2	
Tibia	7	Do.
Metatarsus	5	Necrosis, 3; caries, 2.
Ischium	1	
Sacrum	1	
Operation for ununited fracture of tibia and fibula.	4	Pegged, 2; wired, 2.
Radius and ulna	1	
OPERATIONS ON FRACTURED BONES	44	
Adjustment for fractures of—		
Inferior maxilla	3	
Ribs	5	
Clavicle	1	
Humerus	3	
Radius	5	
Radius and ulna	3	
Metacarpal	1	
Femur	3	Wired, 1.
Patella	1	Wired.
Tibia	4	
Fibula	3	
Tibia and fibula	10	
Metatarsus and phalanges	2	
OPERATIONS ON JOINTS	19	
Reduction of dislocation of—		
Lower jaw	1	
Clavicle	1	
Shoulder	7	
Hip	1	
Operations for ankylosis of—		
Shoulder	2	
Elbow	3	Resisted, 1.
Metacarpus	1	
Ankle	1	
Knee	1	
For contraction of palmar fascia	1	
AMPUTATIONS	61	
Of forearm	2	For gangrene, 1.
Of phalanges (of hand)	42	Necrosis, 4; lacerated wound, 32.
Of thigh	2	
Of leg	6	
Of foot	1	
Of metatarsus	5	
Of phalanges (of foot)	3	Frostbite, 3.
OPERATIONS ON THE SKULL AND BRAIN	4	
Trephining and removing portions of the skull	2	
Trephining mastoid process	2	
OPERATIONS ON THE SPINE AND SPINAL CORD	2	
Laminectomy	2	

TABLE IX.—SURGICAL OPERATIONS, FISCAL YEAR 1902—Continued.

Operations.	No. of cases.	Remarks.
OPERATIONS ON THE FACE, NASAL CAVITIES, AND MOUTH.	10	
Salivary fistula	1	
Nasal polypi	3	
Enlarged tonsil	6	
OPERATIONS ON THE EYE	1	
Enucleation of eyeball	1	
OPERATIONS ON THE LARYNX	1	
Tracheotomy	1	
OPERATIONS ON THE THORAX	12	
Paracentesis	3	
Thoracotomy	4	
Excision of part of rib	3	
Irrigation of pleural cavity	2	
OPERATIONS ON THE ABDOMEN	85	
Paracentesis	3	
Aspiration of liver	1	Abscess, 1.
Abdominal section	7	Cencinoma, 1; abscess liver, 1; rupture liver, 1; perforation intestine, 1; intestinal obstruction, 1; valvular, 1.
Intestinal fistula	1	
Colotemy, inguinal	1	
Removal of kidney	1	Death.
Strangulated hernia	1	
Femoral hernia	1	Bussini, 1.
Inguinal hernia	68	Halstead, 15; Bussini, 45; Phelps, 1.
Ventral hernia	1	
OPERATIONS ON THE RECTUM AND ANUS	81	
Fistula in ano	27	
Incompetence sphincter ani	2	
Stricture of rectum	1	
Hemorrhoids—		
Internal	14	
External	24	Clamp and cautery, 14; ligature, 8.
Mixed	13	Clamp and cautery, 13.
OPERATIONS ON THE BLADDER AND URETHRA	74	
Aspiration of bladder	1	
Suprapubic cystotomy	2	
Meatotomy	3	
Stricture of urethra	68	Forced dilatation, 4; gradual dilatation, 27; internal urethrotomy, 20; external urethrotomy, 21.
OPERATIONS ON THE MALE GENERATIVE ORGANS	194	
For phimosis	98	Circumcision, 45; dorsal incision, 20; lateral incision, 5.
For paraphimosis	4	
For hypertrophy of foreskin	1	
For ulcer of penis	3	
For varicocele	10	
For amputation of penis	1	
For hydrocele of cord	3	
For hydrocele	24	Tapping, 4; tapping and injection, 10; incision, 10.
For castration	6	Tubercle, 3.
For circumcision	44	
OPERATIONS ON THE FEMALE ORGANS OF GENERATION.	3	
Curettement	3	
OPERATIONS ON NERVES	2	
Stretching	1	Sciatic, 1.
Excision of part of	1	Ulna., 1.

TABLE X.—RATIO OF DEATHS FROM SPECIFIC CAUSES.

Deaths from—	Per 100 from all causes.	Deaths from—	Per 100 from all causes.
General diseases	44.01	Diseases of the digestive system	7.55
Diseases of the nervous system	7.29	Diseases of the urinary system	4.94
Diseases of the circulatory system	12.23	Injuries	7.55
Diseases of the respiratory system	13.54	From all other causes	2.86

TABLE XI.—RATIO OF DEATHS IN EACH DISTRICT.

Districts.	Per 100 patients treated in hospital.	Districts.	Per 100 patients treated in hospital.
North Atlantic	3.25	The Mississippi	2.38
Middle Atlantic	3.16	The Great Lakes	2.34
South Atlantic	2.83	The Pacific	3.88
The Gulf	3.59	The quarantine stations	6.06
The Ohio	2.16		

TABLE XII.—COMPARATIVE EXHIBIT—MORTALITY PER 100 PATIENTS TREATED IN HOSPITAL, BY DISTRICTS, 1893–1902.

Districts.	General average.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
North Atlantic	2.86	2.46	2.36	3.09	2.73	2.95	2.55	3.40	2.96	2.89	3.25
Middle Atlantic	3.91	3.69	4.17	4.56	4.12	3.75	3.92	3.69	4.38	3.64	3.22
South Atlantic	3.27	3.37	4.00	3.56	3.55	2.83	3.49	2.99	2.93	3.16	2.83
The Gulf	3.11	3.29	2.88	2.98	2.90	3.33	2.94	2.78	4.11	2.87	3.59
The Ohio	2.87	3.01	2.51	3.23	3.24	2.78	2.73	3.28	3.58	2.18	2.16
The Mississippi	3.18	3.64	3.99	2.53	3.20	2.92	3.18	3.13	3.46	3.46	2.38
The Great Lakes	2.63	2.76	2.61	2.54	2.26	2.86	2.34	3.26	2.42	2.91	2.34
The Pacific	4.06	3.73	3.76	4.38	4.70	4.40	3.43	4.87	3.78	3.62	3.93
The quarantine stations	5.55				4.76	4.94	2.68	1.15	12.90	6.38	6.06

TABLE XIII.—COMPARATIVE EXHIBIT—RATIO OF DEATHS FROM SPECIFIC CAUSES, 1893–1902.

Deaths from—	General average.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
General diseases	47.37	47.70	47.70	43.94	50.70	48.99	45.45	55.60	44.02	45.60	44.01
Diseases of the—											
Nervous system	5.46	4.81	5.58	4.81	4.65	5.56	6.56	3.02	3.62	8.78	7.29
Circulatory system	10.28	8.99	5.58	10.76	11.39	9.85	12.86	9.07	9.71	11.87	12.23
Respiratory system	13.14	13.38	16.51	16.24	12.23	10.85	11.29	9.30	15.12	13.58	13.54
Digestive system	8.06	7.11	8.48	10.58	6.51	9.09	7.35	7.67	9.70	6.65	7.55
Urinary system	6.18	6.48	5.85	6.17	3.49	7.07	5.25	8.37	9.03	5.70	4.94
Injuries	6.36	8.99	5.58	3.43	6.28	6.31	8.66	5.35	6.32	5.22	7.55
From all other causes	3.18	2.54	5.67	4.12	4.65	2.78	2.68	1.62	2.48	2.61	2.86

TABLE XIV.—COMPARATIVE EXHIBIT—AVERAGE DURATION OF TREATMENT IN HOSPITAL IN EACH DISTRICT, 1893–1902.

Districts.	General average.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
North Atlantic	30.24	24.12	26.14	29.97	31.07	26.93	33.11	36.90	31.18	31.62	31.40
Middle Atlantic	29.06	26.29	24.60	34.21	29.68	30.39	29.75	29.37	28.45	28.24	29.66
South Atlantic	27.58	29.23	29.48	29.80	26.83	26.80	29.37	25.73	25.02	26.60	27.00
The Gulf	22.59	22.33	22.13	22.46	22.24	22.41	21.35	21.41	23.15	22.78	25.65
The Ohio	22.95	23.37	22.80	25.18	25.43	22.20	23.83	23.02	21.98	20.88	20.51
The Mississippi	18.94	19.84	21.51	22.92	20.74	19.00	18.57	17.56	15.47	15.42	18.41
The Great Lakes	25.02	27.07	28.32	28.34	28.25	26.27	25.45	24.02	20.24	21.20	21.15
The Pacific	36.87	40.27	43.57	40.66	38.81	36.20	28.41	29.12	31.15	38.17	42.34
The quarantine stations	14.31	....	....	19.97	10.00	11.69	9.00	10.43	13.72	21.21	18.46

TABLE XV.—NATIVITIES OF PATIENTS TREATED IN UNITED STATES MARINE HOSPITALS DURING THE FISCAL YEAR ENDED JUNE 30, 1902.

Countries.	Number.	Countries.	Number.
Total	12,139	India	2
		Ireland	681
Africa	3	Italy	61
Austria	120	Japan	23
Australia	17	Mexico	5
Azores Islands	5	Norway	286
Belgium	19	Philippine Islands	13
Bermuda Islands	6	Portugal	29
Bohemia	11	Prince Edwards Island	13
Bulgaria	7	Russia	65
Canada	261	Scotland	183
Cape Verde Islands	56	Shetland Islands	4
China	21	South America	32
Denmark	192	Spain	104
England	244	Sweden	598
Finland	318	Switzerland	22
France	63	Territory of Hawaii	25
Germany	283	Turkey	8
Greece	29	United States of America	8,167
Hungary	10	West Indies	153

DIVISION OF SANITARY REPORTS AND STATISTICS.

DIVISION OF SANITARY REPORTS AND STATISTICS.

By G. T. VAUGHAN,

Assistant Surgeon-General, Public Health and Marine-Hospital Service, in charge.

UNITED STATES.

The public-health reports for the calendar year ended December 31, 1901, were bound in two volumes, each volume including the reports for a period of six months. The first six months, January 1 to June 30, 1901, were included in the annual report of 1901; so that the period of time considered in this report extends from July 1, 1901, to June 30. 1902.

The reports from State and municipal health officers as to morbidity and mortality are still very incomplete, blank forms having been sent as usual to all cities of a population of 10,000 and over, 422 in number, and only about one-fourth send regular reports.

Weekly reports are received from 70 national quarantine and inspection stations, including Cuba and the island possessions, and from about one-half of the 20 State and municipal quarantine stations, the other half continuing quietly to ignore all requests for reports. It is to be hoped that in accordance with the provisions of the recent act of Congress approved July 1, 1902, a better understanding will now be possible, which will lead to more satisfactory results.

Within the last fiscal year (July 1, 1901, to June 30, 1902, and to the present time, July 20), two tables of mortality statistics of cities of the United States have been published, one in the Public Health Reports of October 4, 1901, for the year 1900, in which the mortality of 1,190 incorporated places in the United States having a population of 1,000 and upward was given; and another in Public Health Reports of July 11, 1902, for the year ended December 31, 1901, in which the mortality of 1,435 incorporated places having a population of 1,000 and more is given.

These tables are compiled from answers received to circular letters sent to all incorporated places in the United States having a population of 1,000 and more, over 3,000 in number. Replies are usually received from about two-thirds of the places, and of these replies a good percentage—from 25 to 30—can not be used on account of errors in filling up the blank forms. The mortality in these tables is computed both on the United States Census population, 1900, and on the estimated population as reported by the municipal authorities, the mortality in the latter case being usually smaller than in the former, as the estimated population is usually greater than that given by the census. These statistics are reasonably accurate and reliable, especially in large cities.

According to the table for 1900, there were 361,779 deaths in a population, according to the United States Census, of 20,712,608, giving an average death rate per 1,000 of 17.47. The estimated population was 21,433,168, giving a death rate of 16.87 per 1,000.

According to the table of 1901 there were 365,216 deaths in a census population of 21,327,275, giving an average death rate per 1,000 of 17.12. The estimated population was 22,726,178, giving a death rate of 16.07 per 1,000.

Of the contagious and infectious diseases it is noticed that the tuberculosis deaths increased from 36,240 to 41,938; smallpox, from 648 to 1,199, almost double; enteric fever, from 7,007 to 7,432, and scarlet fever, from 2,237 to 3,325. On the other hand measles, diphtheria, and whooping cough decreased as follows: Measles, 2,850 in the year 1900, to 1,553 in 1901; diphtheria (including membranous croup), from 9,698 to 8,477, and whooping cough, from 2,539 to 1,990.

YELLOW FEVER.

As in the previous fiscal year, there has been no yellow fever in the United States.

PLAGUE.

Plague continues to appear at San Francisco. During the fiscal year there have been reported 23 cases with 18 deaths.

Plague in the United States as reported to the Surgeon-General, Public Health and Marine-Hospital Service.

JUNE 28, 1901, TO DECEMBER 27, 1901.

Place.	Date.	Cases.	Deaths.	Remarks.
California:				
San Francisco	July 6	1	1	
Do	July 9	3	2	
Do	July 11	1	1	
Do	Aug. 29	1	1	
Do	Sept. 11	1	0	
Do	Sept. 14	1	1	
Do	Sept. 20	1	....	
Do	Sept. 27	1	1	
Do	Sept. 28	1	1	
Do	Sept. 29	1	1	
Do	Oct. 10	1	1	
Do	Oct. 19	1	1	
Do	Oct. 22	1	0	
Do	Oct. 30	1	1	
Do	Nov. 4	1	1	

DECEMBER 28, 1901, TO JUNE 27, 1902.

California:				
San Francisco	Dec. 12	1	....	
Do	Feb. 22	1	1	
Do	Apr. 20	1	1	
Do	May 19	1	1	
Do	May 25	1	1	
Do	May 29	1	1	

SMALLPOX.

During the year smallpox has been reported from every State and Territory in the United States with the exception of Connecticut, Delaware, Idaho, Mississippi, Nevada, New Mexico, and Wyoming.

For the six months ended December 31, 1901, there were reported

17,496 cases with 575 deaths, a mortality of 3.28 per cent. For the six months ended June 30, 1902, there were reported 38,361 cases with 1,277 deaths, a mortality of 3.32. For the entire year there were reported 55,857 cases with 1,852 deaths, giving a mortality of 3.31 per cent compared with the previous year, for which 38,506 cases were reported with 689 deaths, a mortality of 1.77 per cent, while for the year preceding this, ended June 30, 1900, there were reported 15,053 cases with 735 deaths, a mortality of 4.8 per cent. Taking the period of three years ended June 30, 1902, there were reported 109,416 cases with 3,276 deaths, a mortality of 2.99+ per cent. It is observed that the greatest mortality, 4.8 per cent, was for the year ended June 30, 1900, when there is no doubt that while deaths from the disease were quite fully reported, this was not true of the cases, there having been doubt in many places as to the nature of the disease, so that many cases were not reported at all, or were reported under other names.

Reasoning in this way that the entire number of deaths from smallpox is much more likely to be reported than the entire number of cases of the disease, the mortality of 2.99+ per cent is none too small, but on the other hand would probably be slightly lowered if all cases of the disease were known.

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

JUNE 28, 1901, TO DECEMBER 27, 1901.

Place.	Date.	Cases.	Deaths.	Remarks.
Alabama:				
Mobile County	July 8	6		
Alaska:				
Kluckwau	July 26			Reported.
California:				
Los Angeles	June 2-Dec. 3	14		
Oakland	Sept. 1-Oct. 31	4		
San Francisco	July 1-Dec. 15	27	1	
San Pedro	Dec. 7	1		
Total for State		46	1	
Colorado:				
Arapahoe County	May 1-Nov. 30	86		
Archuleta County	do	17		
Bent County	do	9		
Boulder County	do	30		
Chaffee County	do	5		
Clear Creek County	do	9		
Costilla County	do	6		
Custer County	do	2		
Delta County	do	36		
Douglas County	do	10		
El Paso County	do	33		
Fremont County	do	2		
Garfield County	do	6		
Gilpin County	do	66		
Gunnison County	do	10		
Hinsdale County	Nov. 1-Nov. 30	17		
Jefferson County	May 1-Nov. 30	14		
Kit Carson County	do	1		
Lake County	do	19		
La Plata County	do	7		
Larimer County	do	1		
Las Animas County	do	14		
Logan County	do	5		
Mesa County	do	2		
Mineral County	do	42		
Montrose County	do	22		
Morgan County	do	2		
Otero County	do	9		
Ouray County	do	9		
Park County	do	9		

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

JUNE 28, 1901, TO DECEMBER 27, 1901—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Colorado—Continued.				
Phillips County	May 1-Nov. 30	2		
Pitkin County	do	9		
Prowers County	do	2		
Pueblo County	do	22		
Rio Grande County	do	6		
Routt County	do	9		
Saguache County	do	11		
San Juan County	do	15		
San Miguel County	do	4		
Summit County	do	14		
Teller County	do	65		
Washington County	do	5		
Weld County	do	10		
Yuma County	Nov. 1-Nov. 30	4		
Total for State		678		
District of Columbia:				
Washington	June 16-Oct. 5	12		
Georgia:				
Elbert County	Dec. 12	12		
Gilmer County	Nov. 1-Nov. 26	11		
Pickens County	July 1-Aug. 10	37		
Total for State		60		
Illinois:				
Cairo	Nov. 1-Dec. 7	4		
Chicago	June 23-Dec. 21	19		
Fairport	Aug. 18-Sept. 14	2		
Peoria	June 1-Nov. 30	136		
Springfield	do	82		
Total for State		243		
Indiana:				
Adams County	June 1-Nov. 30	77		
Allen County	do	12	1	
Cass County	do	3		
Clinton County	do	20	1	
Davies County	do	68	2	
Dearborn County	do	17		
De Kalb County	do	7		
Gibson County	Nov. 1-Nov. 30	13		
Jay County	June 1-Nov. 30	1		
Jefferson County	Nov. 1-Nov. 30	27		
Kosciusko County	June 1-Nov. 30	16		
Laporte County	do	10	2	
Marion County	do	13		
Marshall County	Nov. 1-Nov. 30	6		
Moutgomery County	June 1-Nov. 30	1		
Ohio County	do	6		
Owen County	do	1		
Perry County	Nov. 1-Nov. 30	15		
Pike County	do	1		
Porter County	June 1-Nov. 30	8		
Posey County	do	4		
Randolph County	do	4		
Spencer County	do	78		
Switzerland County	do	21		
Tippecanoe County	do	32		
Vanderburg County	Oct. 1-Dec. 14	22		
Wabash County	Nov. 1-Nov. 30	5		
Warwick County	Oct. 1-Nov. 30	21		
Wayne County	do	12		
Total for State		516	6	
Iowa:				
Clinton	June 16-Dec. 14	2		
Keokuk	Oct. 1-Oct. 31	2	2	
Ottumwa	June 2-Nov. 30	118		
Total for State		122	2	

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

JUNE 28, 1901, TO DECEMBER 27, 1901—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Kansas:				
Allen County	June 1-Dec. 6	24		
Anderson County	do	1		
Barber County	do	2		
Barton County	do	60	1	
Bourbon County (Fort Scott)	do	77	1	
Chautauqua County	do	30		
Cherokee County	do	42	1	
Clark County	do	4		
Clay County	do	3		
Cloud County	do	1		
Coffey County	do	3		
Cowley County	Nov. 1-Dec. 6	3		
Crawford County	do	136		
Doniphan County	do	59		
Douglas County	do	42		
Greenwood County	do	10	1	
Hamilton County	do	2		
Jefferson County	Nov. 1-Dec. 6	27		
Labette County	do	25		
Lane County	do	6		
Leavenworth County	do	27		
Marshall County	do	34		
Meade County	do	6		
Montgomery County	do	2		
Nemaha County	do	1		
Ness County	June 1-Dec. 6	17		
Ottawa County	do	5		
Phillips County	Nov. 1-Dec. 6	3		
Pottawatomie County	do	2		
Reno County	do	1		
Riley County	do	1		
Shawnee County	do	25		
Stafford County	do	19		
Stevens County	do	8		
Sumner County	do	32		
Sedgwick County (Wichita)	do	26	1	
Washington County	do	59	1	
Woodson County	do	14		
Total for State		839	6	
Kentucky:				
Lexington	June 28-Nov. 30	15		
Louisiana:				
Caddo	Nov. 24-Nov. 30	10		
New Orleans	June 16-Dec. 7	70	6	
Shreveport	July 14-Dec. 14	24	1	
Total for State		104	7	
Maine:				
Portland	Sept. 10-Sept. 14	2		
Maryland:				
Baltimore	Nov. 24-Dec. 14	2		
Massachusetts:				
Boston	July 7-Dec. 21	441	59	
Brockton	Dec. 1-Dec. 14	2		
Cambridge	Oct. 20-Dec. 14	11	3	
Chelsea	Nov. 17-Dec. 7	3		
Everett	do	1		
Fall River	June 23-July 13	14	1	
Fitchburg	June 2-June 8	1		
Gloucester	July 17-Dec. 21	4		
Holyoke	July 7-July 13	1		
Lowell	Nov. 24-Dec. 21	7		
Malden	Nov. 24-Dec. 14	3	1	
Medford	Sept. 1-Dec. 14	3		
New Bedford	July 1-Dec. 7	5	1	
Newton	Sept. 29-Nov. 30	4	1	
Quincy	June 16-June 22	1		
Somerville	Nov. 17-Dec. 20	4		
Waltham	June 23-June 29	1		
Worcester	June 15-July 6	5	3	
Total for State		521	69	

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

JUNE 28, 1901, TO DECEMBER 27, 1901—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Michigan:				
Alger County	Nov. 9			Present.
Houghton County	July 1-Nov. 9			Do.
Isabella County	do			
Kent County (Grand Rapids)	July 1-Nov. 30	3		Do.
Mackinac County	do			Do.
Mason County	do			Do.
Osceola County	do			Do.
Saginaw County	do			Do.
Sanilac County	Nov. 9			Do.
Van Buren County	do			Do.
Washtenaw County	do			Do.
Wayne County (Detroit)	July 1-Nov. 9	3		Do.
Wexford County	Nov. 9			
Total for State		6		
Minnesota:				
Aitkin County	June 17-Dec. 2	53	1	
Anoka County	do	19		
Becker County	do	28		
Beltrami County	do	80		
Benton County	do	34		
Big Stone County	do	18		
Blue Earth County	do	4		
Brown County	do	16		
Carlton County	do	45	1	
Carver County	do	39		
Cass County	do	31	2	
Chippewa County	do	10		
Clay County	do	95	1	
Cook County	do	26		
Cottonwood County	do	3		
Crow Wing County	do	75		
Dakota County	do	3		
Dodge County	do	2		
Douglas County	do	29		
Faribault County	do	1		
Fillmore County	do	40		
Freeborn County	do	4		
Goodhue County	do	2		
Hennepin County (Minneapolis).	do	56		
Houston County	do	51		
Hubbard County	do	8		
Isanti County	do	1		
Itasca County	do	23		
Jackson County	do	9		
Kanabec County	do	2		
Kandiyohi County	do	1		
Kittson County	do	13		
Lake County	Nov. 18-Dec. 2	2		
Lesueur County	June 17-Dec. 2	8		
Lyon County	do	25		
McLeod County	do	9	1	
Marshall County	Sept. 9-Dec. 2	27		
Martin County	June 17-Dec. 2	9		
Meeker County	do	3		
Millelacs County	do	3		
Morrison County	do	14		
Mower County	Sept. 9-Dec. 2	61		
Murray County	June 17-Dec. 2	10		
Nicollet County	do	1		
Nobles County	Aug. 26-Dec. 2	3		
Norman County	June 17-Dec. 2	154		
Olmsted County (Rochester)	do	14		
Ottertail County	do	122		
Pine County	do	64	1	
Pipestone County	do	8		
Polk County	do	132		
Pope County	do	107	1	
Ramsey County (St. Paul)	do	37		
Red Lake County	do	109		
Red Wood County	do	28	2	
Renville County	do	62	1	
Rice County	do	64	1	
Rock County	do	2		
Roseau County	do	1		
St. Louis County (Duluth)	do	153		
Scott County	Nov. 18-Dec. 2	1		

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

JUNE 28, 1901, TO DECEMBER 27, 1901—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Minnesota—Continued.				
Sherburne County	June 17-Dec. 2	22		
Sibley County	do	46		
Stearns County	do	149		
Steele County	do	15		
Stevens County	do	6		
Swift County	Aug. 1-Dec. 2	1		
Todd County	June 17-Dec. 2	51		
Traverse County	do	12		
Wabasha County	June 17-Dec. 2	8	1	
Wadena County	do	10		
Waseca County	do	11		
Washington County	do	43		
Winona County (Winona)	do	33	1	
Total for State		2,494	14	
Missouri:				
St. Joseph	Aug. 1-Oct. 31	91	1	
St. Louis	June 17-Dec. 15	377	2	
Total for State		468	3	
Nebraska:				
Omaha	June 16-Dec. 14	89		
South Omaha	June 25-Dec. 14	83		
Total for State		172		
New Hampshire:				
Concord	Oct. 6-Oct. 12	1	1	
Manchester	June 16-July 13	3		
Nashua	July 21-Aug. 3	3		
Total for State		7	1	
New Jersey:				
Camden County	Oct. 6-Dec. 21	53	1	
Essex County, including Newark.	July 1-Dec. 14	238	40	
Hudson County—				
Bayonne	June 17-Dec. 15	19		
East Newark	do	3		
Guttenberg	do	1		
Harrison	do	85	2	
Hoboken	do	19	1	
Jersey City	do	57		
Kearny	do	3		
North Bergen Town	do	1		
Secaucus	do		9	
Union	do	1		
West New York	do	2		
Weehawken	do	3		
Passaic County	Oct. 1-Nov. 16	3		
Total for State		433	53	
New York:				
Buffalo	June 25-Dec. 4	75	2	
Dunkirk	July 1-July 6	1		
Elmira	June 16-Oct. 17	22		
Gowanda	July 29	7		
New York	June 23-Dec. 14	597	166	
Rochester	July 1-July 31	5		
Total for State		707	168	
North Carolina:				
Alamance County	May 1-Nov. 30	1		
Buncombe County	do	26		
Burke County	do	9		
Cabarrus County	do	43		
Caswell County	do	13		
Chatham County	do	4		
Cleveland County	do	18		
Cumberland County	do	37		
Davie County	July 1-Nov. 30	4		
Duplin County	Nov. 1-Nov. 30	5		
Durham County	May 1-Nov. 30	20		
Forsyth County	July 1-Nov. 30	5	1	

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

JUNE 28, 1901, TO DECEMBER 27, 1901—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
North Carolina—Continued.				
Gaston Connty	May 1-Nov. 30	17		
Granville County	do	4		
Greene County	do	3		
Guilford County	do	16		
Haywood County	July 1-Nov. 30	4		
Henderson County	do	50		
Johnston County	May 1-Nov. 30	19		
McDowell County	do	5		
Mecklenburg County	do	46		
Nash County	do	2		
Orange County	do	37		
Person County	do	78		
Polk County	do	2		
Randolph County	July 1-Nov. 30	30		
Robeson County	May 1-Nov. 30	2		
Rockingham County	do	28		
Rowan County	do	3		
Rutherford County	do	3		
Sampson County	do	1		
Stanly County	do	11		
Stokes County	Nov. 1-Nov. 30	1		
Vance County	May 1-Nov. 30	2		
Wake County	do	20		
Wayne County	do	18		
Total for State		587	1	
North Dakota:				
Barnes County	July 1-Sept. 15	24		
Bottineau County	Sept. 15-Dec. 2	12		
Bowdon	Oct. 20-Oct. 26	1		
Burleigh County	July 14-July 20	1		
Cass County (Fargo)	July 1-Nov. 25	6		
Edmond County	Sept. 15-Oct. 15	6		
Foster County	Sept. 15	1		
Grand Forks County	do	6		
Kidder County	Nov. 23-Nov. 29	4		
Lamoure County	Sept. 15-Oct. 25	8		
Mayville	Sept. 15-Nov. 2	4		
Pembina County	July 1-July 6	5		
Richland County	do	2		
Rolette County	Sept. 15	1		
Stutsman County	July 7-Nov. 30	3		
Traill County	July 14-July 20	1		
Wells County	Sept. 15	5		
Fisher	July 7-July 13	1		
Lakota	July 1-July 6	2		
Total for State		93		
Ohio:				
Adams County	Jan. 1-July 31	27	1	
Allen County	do	8		
Ashland County	do	15		
Ashtabula County	do	31		
Athens County	do	19		
Auglaize County	do	5		
Belmont County	do	44		
Brown County	do	7		
Carroll County	do	1		
Champaign County	do	6	1	
Clark County	do	6		
Clermont County	June 1-July 31	1		
Columbiana County	Jan. 1-July 31	2		
Coshocton County	do	81		
Crawford County	do	23		
Cuyahoga County (Cleveland)	Jan. 1-Dec. 21	1,315	18	
Defiance County	Jan. 1-July 31	21		
Delaware County	do	4		
Erie County	do	5		
Fairfield County	do	1		
Franklin County	do	46		
Gallia County	do	64	1	
Geauga County	do	29		
Greene County	do	2		
Guernsey County	do	13		
Hamilton County (Cincinnati)	Jan. 1-Dec. 13	105	1	
Hancock County	Jan. 1-July 31	8		

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

JUNE 28, 1901, TO DECEMBER 27, 1901—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Ohio—Continued.				
Hardin County	Jan. 1-July 31	206	....	
Harrison County	do	9	....	
Henry County	do	11	....	
Hocking County	do	6	2	
Huron County	do	44	1	
Jackson County	do	82	....	
Jefferson County	do	32	1	
Knox County	do	1	....	
Lake County	do	17	1	
Lawrence County	do	90	....	
Logan County	June 1-July 31	1	....	
Lorain County	Jan. 1-July 31	78	2	
Lucas County (Toledo)	do	22	....	
Mahoning County	Jan. 1-June 1	6	....	
Marion County	do	1	....	
Mercer County	do	1	....	
Monroe County	June 1-July 31	64	1	
Montgomery County	Jan. 1-July 31	13	1	
Morgan County	do	1	....	
Ottawa County	do	34	1	
Paulding County	do	38	....	
Perry County	do	57	....	
Pike County	do	2	....	
Portage County	do	24	....	
Putnam County	do	17	....	
Richland County	do	71	1	
Sandusky County	June 1-July 31	1	....	
Scioto County	Jan. 1-July 31	171	2	
Seneca County	do	7	....	
Shelby County	do	76	....	
Stark County	do	10	2	
Summit County	do	2	1	
Trumbull County	do	15	1	
Tuscarawas County	do	4	....	
Van Wert County	do	15	....	
Vinton County	do	32	1	
Washington County	do	72	1	
Williams County	do	91	....	
Wood County	do	171	1	
Wyandot County	do	1	....	
Total for State		3,485	42	
Oregon:				
Portland	June 1-Nov. 30	13	....	
Pennsylvania:				
Adams County	Oct. 1-Oct. 31	1	....	
Allegheny County (including Pittsburg).	Feb. 1-Oct. 31	103	1	
Armstrong County	do	1	....	
Bedford County	do	25	....	
Berks County	do	3	....	
Blair County	do	2	....	
Bucks County	Aug. 27-Oct. 31	10	....	
Butler County	Feb. 1-Oct. 31	2	....	
Chester County	May 9-Oct. 31	85	4	
Cumberland County	do	16	....	
Dauphin County (including Harrisburg).	do	249	....	
Delaware County	do	89	4	
Erie County	do	34	....	
Fayette County	do	3	....	
Franklin County	do	51	....	
Greene County	do	2	....	
Lancaster County	do	9	....	
Lawrence County	do	53	....	
Lebanon County (including Lebanon).	Feb. 1-Oct. 31	181	3	
Luzerne County	do	46	3	
Lycoming County (including Williamsport).	do	101	....	
McKean County	do	8	....	
Mercer County	do	13	2	
Mifflin County	do	1	....	
Montgomery County	Feb. 1-Oct. 31	1	....	
Perry County	do	17	....	
Philadelphia County (including Philadelphia).	do	438	59	

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

JUNE 28, 1901, TO DECEMBER 27, 1901—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Pennsylvania—Continued.				
Schuylkill County	July 27–Oct. 31	13		
Sullivan County	Aug. 27–Oct. 31	3		
Tioga County	Feb. 1–Oct. 31	6		
Venango County	do	1		
Warren County	do	1		
Washington County	do	12		
Westmoreland County	Feb. 1–Aug. 27	27		
York County	do	12		
Total for State		1,614	76	
Rhode Island:				
Newport	Oct. 6–Nov. 16	11		
Providence	June 23–July 6	3		
Total for State		14		
South Carolina:				
Greenville	Dec. 8–Dec. 14	2		
Tennessee:				
Anderson County	Apr. 1–Sept. 30	13	1	
Blount County	do	37		
Bradley County	do	15		
Campbell County	do	15		
Carroll County	do	9		
Cocke County	do	93		
Coffee County	do	30		
Cumberland County	do	15		
Davidson County	do	131		
Decatur County	do	20		
De Kalb County	do	14		
Dickson County	do	40		
Dyer County	do	11		
Fayette County	do	40		
Franklin County	do	16		
Gibson County	do	10		
Giles County	do	62		
Grainger County	do	13	1	
Greene County	do	25	1	
Hamblen County	do	33		
Hamilton County (including Chattanooga).	do	174	5	
Hardeman County	do	64	2	
Hardin County	do	17	1	
Haywood County	do	42		
Henderson County	do	17	1	
Henry County	do	61		
Houston County	do	23		
Humphreys County	do	65	1	
James County	do	2		
Lawrence County	do	1		
Lewis County	do	1		
Lincoln County	do	18		
London County	do	1		
McMinn County	do	12		
Madison County	do	1		
Marion County	do	154	3	
Marshall County	do	5		
Meigs County	do	3		
Morgan County	do	11		
Obion County	do	60		
Perry County	do	47		
Polk County	do	12		
Rhea County	do	8		
Roane County	do	29		
Robertson County	do	32	4	
Rutherford County	do	70	2	
Sevier County	do	4		
Shelby County (including Memphis).	do	416	72	
Stewart County	Apr. 1–Sept. 30	1		
Sumner County	do	2		
Trousdale County	do	43		
Union County	do	9		
Washington County	do	52		
Weakley County	do	10		
Williamson County	do	23		
Wilson County	do	23		
Total for State		2,155	94	

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

JUNE 28, 1901, TO DECEMBER 27, 1901—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Texas:				
Jasper County	June 17–July 17		2	
San Antonio	July 1–Nov. 30	8		
Total for State		8	2	
Utah:				
Ogden	July 1–July 31	1		
Salt Lake City	June 16–Dec. 14	49		
Total for State		50		
Vermont:				
Burlington	Sept. 29–Dec. 14	48		
Virginia:				
Roanoke	June 1–June 30	1		
Washington:				
Adams County	Mar. 28–Nov. 1	5		
Chehalis County	June 1–Nov. 1	15		
Chelan County	Aug. 1–Oct. 1	6		
Clallam County	June 18	3		
Columbia County	Jan. 1–Apr. 1	13		
Cowlitz County	June 30			Reported prevalent in logging camps.
Douglas County	Apr. 4	1		
Kitsap County	July 18	1		
King County (including Seattle).	Jan. 1–Oct. 1	105	3	
Kittitas County	Feb. 18–Sept. 28	8		
Klickitat County	Aug. 16	4		
Lincoln County	Feb. 1–Nov. 1	48		
Pacific County	Mar. 6	2	1	
Pierce County (including Tacoma).	Jan. 1–Dec. 8	31		
Skaminia County	June 10	1		
Snohomish County	Mar. 1–Sept. 20	36		
Spokane County (including Spokane).	Jan. 1–Nov. 1	227	2	
Stevens County	Jan. 1–Oct. 28	27		
Thurston County	Feb. 16	1		
Wallawalla County	Feb. 18	8		
Whatcom County	May 1–Aug. 1	40		
Whitman County	June 1–Nov. 1	74		
Total for State		656	6	
West Virginia:				
Berkeley County	July 21	9		
Wheeling	June 16–Dec. 14	4		
Total for State		13		
Wisconsin:				
Ashland County	Aug. 1–Aug. 8	1		
Brown County (including Greenbay).	Aug. 18–Dec. 15	45		
Clark County	Aug. 1–Aug. 8	17		
Douglas County	do	3		
Dunn County	do	6		
Fond du Lac County	Dec. 4–Dec. 10	1		
Kewaunee County	Aug. 1–Aug. 8	1		
Milwaukee County (including Milwaukee).	Sept. 7	1		
Marathon County	do	2		
Showano County	do	8	8	
Winnebago County	do	5		
Eighty places	May 5–May 31	347	0	
Sixty-seven places	June 1–June 30	288	3	
Fifty-two places	July 1–July 31	268	0	
Nine places	Aug. 1–Aug. 8	35	8	
Forty-four places	Aug. 9–Sept. 30	164	5	
Total for State		1,192	24	
Total for State, same period, 1900.		412	4	
Grand total		17,496	575	

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

DECEMBER 28, 1901, TO JUNE 27, 1902.

Place.	Date.	Cases.	Deaths.	Remarks.
Alabama:				
Birmingham	Dec. 1-Mar. 31	29	....	
Mobile	Apr. 8-May 10	23	....	
Total for State		52	....	
Alaska:				
Hooniah	Dec. 8-Dec. 31	8	....	
Arizona:				
Naco	Feb. 23	12	....	
Yuma	Jan. 1	100	....	Estimated.
Total for Territory		112	....	
Arkansas:				
Mississippi County	Feb. 18	....	100	
Pulaski County (including Little Rock).	Jan. 12-Jan. 22	50	1	
Total for State		50	101	
California:				
Humboldt County	Feb. 2	30	....	
Los Angeles	Dec. 29-June 14	94	....	
Oakland	Jan. 1-Apr. 30	26	....	
Sacramento	Feb. 2-June 7	8	....	
San Diego	Jan. 25-Apr. 1	7	....	One case on steamship Spokane.
San Francisco	Dec. 16-June 8	178	....	
Stockton	Jan. 1-Apr. 30	44	....	
Total for State		387	....	
Colorado:				
Arapahoe County (Denver)	Dec. 1-May 31	93	....	
Archuleta County	Dec. 1-Apr. 30	27	....	
Baca County	Mar. 1-Apr. 30	4	....	
Bent County	Feb. 1-Apr. 30	22	....	
Boulder County	do	27	....	
Chaffee County	Dec. 1-Apr. 30	2	....	
Clear Creek County	Dec. 1-Feb. 28	4	....	
Delta County	Dec. 1-Mar. 31	66	....	
El Paso County	Dec. 1-Apr. 30	78	....	
Fremont County	do	11	....	
Gilpin County	do	54	....	
Grand County	Feb: 1-Mar. 31	19	....	
Gunnison County	Dec. 1-Jan. 31	14	....	
Hinsdale County	do	35	....	
Huerfano County	Dec. 1-Apr. 30	6	....	
Jefferson County	Dec. 1-Jan. 31	10	....	
Kiowa County	Apr. 1-Apr. 30	1	....	
La Plata County	Dec. 1-Mar. 31	7	....	
Larimer County	Mar. 1-Apr. 30	103	....	
Las Animas County	Dec. 1-Apr. 30	38	....	
Logan County	do	35	....	
Mesa County	Dec. 1-Mar. 31	77	....	
Mineral County	Dec. 1-Jan. 31	1	....	
Montrose County	Dec. 1-Apr. 30	35	....	
Morgan County	Dec. 1-Mar. 31	2	....	
Otero County	Dec. 1-Apr. 30	69	....	
Ouray County	Mar. 1-Mar. 31	10	....	
Phillips County	Mar. 1-Apr. 30	10	....	
Pitkin County	Dec. 1-Mar. 31	3	....	
Prowers County	Feb. 1-Apr. 30	3	....	
Pueblo County	Dec. 1-Apr. 30	23	....	
Rio Blanco County	Feb. 1-Feb. 28	11	....	
Rio Grande County	Dec. 1-Mar. 31	14	....	
San Juan County	Feb. 1-Mar. 31	3	....	
San Miguel County	Dec. 1-Apr. 30	25	....	
Teller County	do	13	....	
Washington County	Mar. 1-Mar. 31	8	....	
Weld County	Feb. 1-Apr. 30	98	....	
Total for State		1,061	....	
District of Columbia:				
Washington	Jan. 12-May 17	9	....	

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

DECEMBER 28, 1901, TO JUNE 27, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Florida:				
Escambia County	Mar. 4	1		One on schooner M. S. Patten.
Jacksonville	Mar. 9-May 31	29		
Key West	Feb. 5	1		
Oak Hill	June 4	4		
Palmetto	do	1		
Total for State		36		
Georgia:				
Augusta	Mar. 1-Mar. 31		1	
South Atlantic Quarantine	Mar. 12	1		On schooner L. C. Anderson.
Total for State		1	1	
Illinois:				
Belleville	Jan. 12-June 14	42		
Cairo	Mar. 30-Apr. 12	9		
Chicago	Jan. 5-June 21	218	3	
Danville	Jan. 19-Apr. 5	22		
Freeport	Jan. 5-June 14	19		
Galesburg	Jan. 12-May 17	28		
Joliet	Mar. 2-Mar. 22	9		
Peoria	Dec. 1-Apr. 30	93		
Springfield	Dec. 1-Jan. 31	314		
Total for State		754	3	
Indiana:				
Adams County	Jan. 1-Feb. 28	65		
Allen County	Feb. 1-Feb. 28	5		
Cass County	do	5	1	
Clark County	do	13		
Clay County	do	8		
Daviess County	Jan. 1-Jan. 31	15		
Dearborn County	do	11		
Decatur County	do	2		
Dekalb County	do	1		
Delaware County (Muncie)	Jan. 1-May 30	20	1	
Dubois County	Feb. 1-Feb. 28	17		
Elkhart County (Elkhart)	Feb. 2-Mar. 15	37		
Floyd County	Jan. 1-Jan. 31	9		
Fountain County	Jan. 1-Feb. 28	52		
Gibson County	do	31		
Grant County	do	16		
Greene County	do	26		
Hancock County	Feb. 1-Feb. 28	15		
Howard County	Jan. 31-Feb. 28	11	1	
Huntington County	Feb. 1-Feb. 28	17		
Jackson County	do	2		
Jay County	do	5		
Jefferson County	Jan. 1-Jan. 31	17	1	
Knox County	Jan. 1-Feb. 28	66	1	
Lagrange County	Feb. 1-Feb. 28	2		
Laporte County (Michigan City).	Feb. 17-Mar. 17	2		
Marion County (Indianapolis)	Jan. 1-June 14	273	1	
Marshall County	Jan. 1-Jan. 31	7		
Martin County	Feb. 1-Feb. 28	6		
Monroe County	Jan. 1-Jan. 31	8		
Montgomery County (Crawfordsville).	Jan. 1-Mar. 8	60		
Morgan County	Jan. 1-Feb. 28	30		
Noble County	Feb. 1-Feb. 28	24		
Owen County	Jan. 1-Feb. 28	20		
Perry County	do	37	1	
Pike County	Jan. 1-Jan. 31	7		
Porter County	Feb. 1-Feb. 28	1		
Pulaski County	do	8	1	
St, Joseph County (South Bend)	Apr. 27-June 14	14		
Shelby County	Jan. 1-Feb. 28	15	1	
Spencer County	do	100		
Union County	do	3		
Vanderburg County (Evansville).	Dec. 15-June 14	106		
Vigo County (Terre Haute)	Jan. 1-June 7	84		
Wabash County	Jan. 1-Feb. 28	12		
Warrick County	do	78	1	

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

DECEMBER 28, 1901, TO JUNE 27, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Indiana—Continued.				
Wayne County	Jan. 1-Feb. 28	48		
Wells County	do	14		
Total for State		1,370	10	
Indian Territory:				
Duncan	Feb. 4	6		
Iowa:				
Adair County	Jan. 1-Jan. 31			Present.
Allamakee County	Jan. 1-Mar. 31			Do.
Benton County	Jan. 1-Jan. 31			Do.
Black Hawk County	Feb. 1-Mar. 31			Do.
Boone County	Jan. 1-Mar. 31			Do.
Buena Vista County	do			Do.
Carroll County	Feb. 1-Mar. 31			Do.
Cerro Gordo County	do			Do.
Cherokee County	Jan. 1-Mar. 31			Do.
Chickasaw County	Nov. 1-Jan. 31			Do.
Clarke County	Feb. 1-Mar. 31			Do.
Clayton County	Nov. 1-Mar. 31			Do.
Clinton County	do	19		
Crawford County	Nov. 1-Feb. 15			Do.
Dallas County	Nov. 1-Mar. 31			Do.
Davis County	Nov. 1-Feb. 15			Do.
Decatur County	Feb. 1-Mar. 31			Do.
Delaware County	Nov. 1-Feb. 15			Do.
Des Moines County	Nov. 1-Mar. 31			Do.
Dickinson County	Feb. 1-Mar. 31			Do.
Dubuque County	Nov. 1-Mar. 31			Do.
Floyd County	Nov. 1-Feb. 15			Do.
Fremont County	do			Do.
Greene County	Feb. 1-Mar. 31			Do.
Grundy County	do			Do.
Guthrie County	do			Do.
Hardin County	Jan. 1-Jan. 31			Do.
Harrison County	Feb. 1-Mar. 31			Do.
Henry County	do			Do.
Ida County	Nov. 1-Mar. 31			Do.
Iowa County	Nov. 1-Jan. 31			Do.
Jasper County	Jan. 1-Mar. 31			Do.
Jefferson County	Feb. 1-Mar. 31			Do.
Johnson County	do			Do.
Kossuth County	do			Do.
Lee County	do			Do.
Linn County	Jan. 1-Jan. 31			Do.
Louisa County	Nov. 1-Mar. 31			Do.
Lucas County	Jan. 1-Jan. 31			Do.
Lyon County	Jan. 1-Mar. 31			Do.
Madison County	Feb. 1-Mar. 31			Do.
Mahaska County	Jan. 1-Jan. 31			Do.
Marshall County	Feb. 1-Mar. 31			Do.
Mills County	do			Do.
Monroe County	Jan. 1-Mar. 31			Do.
Montgomery County	Jan. 1-Jan. 31			Do.
O'Brien County	Nov. 1-Mar. 31			Do.
Osceola County	Jan. 1-Jan. 31			Do.
Palo Alto County	Feb. 1-Mar. 31			Do.
Plymouth County	Jan. 1-Jan. 31			Do.
Pocahontas County	Jan. 1-Mar. 31			Do.
Polk County	Nov. 1-Mar. 31			Do.
Pottawattamie County	Feb. 1-Mar. 31			Do.
Poweshiek County	Jan. 1-Jan. 31			Do.
Ringgold County	Feb. 1-Mar. 31			Do.
Sac County	Nov. 1-Mar. 31			Do.
Scott County (Davenport)	Dec. 1-Mar. 31	69		
Shelby County	Feb. 1-Mar. 31			Do.
Sioux County	do			Do.
Taylor County	Jan. 1-Mar. 31			Do.
Union County	Feb. 1-Mar. 31			Do.
Wapello County (Ottumwa)	Dec. 1-Apr. 20	166		
Warren County	Nov. 1-Mar. 31			Do.
Washington County	Jan. 1-Mar. 31			Do.
Winnebago County	Feb. 1-Mar. 31			Do.
Winneshiek County	do			Do.
Woodbury County	Jan. 1-Mar. 31			Do.
Worth County	Jan. 1-Jan. 31			Do.
Total for State		254		

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

DECEMBER 28, 1901, TO JUNE 27, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Kansas:				
Allen County	Dec. 1-Mar. 31	40		
Anderson County	Dec. 1-May 31	46		
Atchison County	Mar. 1-Mar. 31	19		
Barton County	Apr. 1-Apr. 30	5		
Brown County	Dec. 1-Mar. 31	4		
Chautauqua County	Dec. 1-Feb. 28	72		
Cherokee County	Dec. 1-Mar. 31	28		
Clay County	Dec. 1-May 31	6		
Cloud County	do	127		
Cowley County	Dec. 1-Mar. 31	13		
Crawford County (Girard)	Dec. 1-May 31	329	1	
Decatur County	Dec. 1-Feb. 28	40		
Dickinson County	Feb. 1-Mar-31	20		
Douglas County	Apr. 1-Apr. 30	2		
Ellsworth County	Feb. 1-May 31	8		
Finney County	May 1-May 31			Some cases reported; number not known.
Ford County	Apr. 1-Apr. 30	9		
Greenwood County	Dec. 1-Mar. 31	20		
Hamilton County	Feb. 1-Feb. 28	71		
Harper County	Feb. 1-Mar. 13	5		
Harvey County	May 1-May 31	19		
Jackson County	Feb. 1-Apr. 30	12		
Jefferson County	Dec. 1-Mar. 31	10		
Jewell County	Dec. 1-Feb. 28	8		
Kingman County	Dec. 1-May 31	10		
Labette County	do	19		
Leavenworth County	Dec. 1-Feb. 28	1		
Lincoln County	do	7		
McPherson County	Feb. 1-May 31	61		
Marion County	Dec. 1-Apr. 30	27		
Marshall County	do	82		
Miami County	Feb. 1-Mar. 31	2		
Mitchell County (Beloit)	Dec. 1-Mar. 31	82		
Montgomery County (Coffeyville).	Dec. 1-Feb. 28	22		
Morris County	Feb. 1-Mar. 31			Number not known.
Nemaha County	Dec. 1-Mar. 31	4		
Norton County	Mar. 1-Apr. 30	9		
Osborne County	Feb. 1-Mar. 31	2		
Ottawa County	Dec. 1-Mar. 31	35		
Phillips County	do	39	1	
Pottawatomie County	Apr. 1-Apr. 30	4		
Pratt County	Mar. 1-Mar. 31	10		
Rawlins County	Feb. 1-Mar. 31	8		
Reno County	Dec. 1-Apr. 30	8		
Russell County	Mar. 1-May 31	8		
Saline County (Salina)	Dec. 1-May 31	102		
Sedgwick County (Wichita)	Dec. 1-June 14	80		
Shawnee County	Dec. 1-May 31	189		
Sheridan County	Apr. 1-Apr. 30	4		
Smith County	Dec. 1-Apr. 30	67		
Stafford County	Dec. 1-May 31	61	1	
Sumner County	do	145		
Thomas County	Feb. 1-Mar. 31	2		
Washington County	Dec. 1-May 31	172		
Woodson County	Apr. 1-Apr. 30	2		
Total for State		2,177	3	
Kentucky:				
Covington	Jan. 27-June 14	188		
Lexington	Dec. 22-May 17	24	2	
Louisville	Jan. 1-Apr. 28	85	1	
Total for State		297	3	
Louisiana:				
Caddo County (including Shreveport).	Jan. 1-May 31	228		
Catahoula County	Feb. 1-Mar. 1	1		
Iberia County	May 3-May 31	2		
Natchitoches County	Feb. 1-Mar. 1	19	1	
Orleans County (including New Orleans).	Dec. 15-May 31	23	4	Ten cases imported.
Sabine County	Feb. 1-Mar. 1	6		
St. James County	Mar. 1-Mar. 29	1		
Union County	Feb. 1-Mar. 1	1		
Total for State		281	5	

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

DECEMBER 28, 1901, TO JUNE 27, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Maine:				
Biddeford	Jan. 1-May 31	2		
Durham	Feb. 15-Mar. 22	13		
Freeport	Feb. 19-Mar. 22	1		
Hollis	Mar. 7-Mar. 22	1		
Portland	Dec. 22-May 10	38	6	
Rockland	June 10	1		Imported.
Saco	Mar. 7-Mar. 22	6		
Sanford	Mar. 15-Mar. 19	1		
Scarboro	Mar. 7-Mar. 22	1		
South Portland	do	4		
Washington Mills	To Mar. 22	1		
Westbrook	do	1		
Total for State		70	6	
Maryland:				
Baltimore	Feb. 2-June 7	25	4	
Cumberland	Mar. 1-May 31	12	1	
Total for State		37	5	
Massachusetts:				
Blackstone	Jan. 2-Jan. 8	2		
Boston	Dec. 22-June 21	720	129	
Brockton	Dec. 29-May 24	16		
Brookline	Jan. 12-May 3	4	1	
Cambridge	Dec. 15-June 21	115	9	
Chelsea	Dec. 29-June 7	15		
Chicopee	Jan. 19-June 21	6		
Clinton	Jan. 5-Jan. 11	3		
Everett	Jan. 26-June 7	24	2	
Fall River	Dec. 22-May 24	8	1	
Fitchburg	Mar. 16-Apr. 26	4		
Haverhill	Feb. 23-Mar. 15	2		
Holyoke	Jan. 12-Apr. 30	49		
Lawrence	Mar. 2-June 7	10	3	
Lowell	Dec. 29-June 21	31	2	
Malden	Dec. 15-June 14	34	2	
Marlboro	Jan. 5-Jan. 11	1		
Medford	Dec. 22-Apr. 26	7		
Melrose	Mar. 5-May 31	6	2	
New Bedford	Jan. 17-Apr. 26	28		
Newburyport	Jan. 26-Mar. 22	9	1	
Newton	Dec. 29-June 14	13		
North Adams	Feb. 23-Mar. 1	1		
Northampton	May 4-May 10	1		
Quincy	Dec. 22-Apr. 12	11	4	
Somerville	Dec. 29-June 7	31	3	
Taunton	Feb. 9-Mar. 29	4		
Waltham	Jan. 26-Mar. 1	3	1	
Weymouth	Jan. 5-Mar. 1	5	1	
Woburn	Dec. 15-Feb. 1	2	1	
Total for State		1,165	162	
Michigan:				
Alcona County	Mar. 15-Mar. 22			Present.
Alger County	Mar. 22-Apr. 5			Do.
Allegan County	Feb. 15-May 31			Do.
Alpena County	Feb. 22-June 7			Do.
Antrim County	Feb. 15-May 10			Do.
Arenac County	Feb. 15-June 14			Do.
Barry County	Feb. 15-May 31			Do.
Bay County (Bay City)	Jan. 25-June 14	15		
Benzie County	Feb. 22-June 14			Do.
Berrien County	Feb. 22-Apr. 5			Do.
Branch County	Feb. 15-May 3			Do.
Calhoun County	Apr. 19-June 14			Do.
Cass County	Feb. 15-June 7			Do.
Charlevoix County	Feb. 15-Apr. 5			Do.
Cheboygan County	Feb. 15-June 14		1	
Chippewa County (Sault Ste. Marie).	Mar. 15-May 31	1		
Clare County	Feb. 15-Apr. 5			Do.
Clinton County	Feb. 15-May 10			Do.
Crawford County	Feb. 15-Apr. 26			Do.
Delta County	Feb. 15-June 7			Do.
Dickinson County	Feb. 15-June 14			Do.

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

DECEMBER 28, 1901, TO JUNE 27, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Michigan—Continued.				
Eaton County	Mar. 29-June 14			Present.
Emmet County	Feb. 15-June 14			Do.
Genesee County	do			Do.
Gladwin County	Feb. 15-May 3			Do.
Gogebic County	do			Do.
Grand Traverse County	Feb. 15-May 31			Do.
Gratiot County	Feb. 15-May 10		1	
Hillsdale County	May 17-June 14			Do.
Houghton County	Feb. 15-June 14			Do.
Huron County	Mar. 15-June 14			Do.
Ingham County	Feb. 15-June 14			Do.
Ionia County	do		1	
Iosco County	Mar. 22-June 14			Do.
Iron County	Feb. 15-June 14			Do.
Isabella County	do			Do.
Jackson County	Apr. 26-June 14			Do.
Kalamazoo County	Feb. 22-June 14			Do.
Kalkaska County	Feb. 15-June 14			Do.
Kent County (Grand Rapids)	Dec. 15-June 14	26	1	
Lake County	Feb. 22-May 24			Do.
Lapeer County	Feb. 22-June 14			Do.
Leelanaw County	Feb. 15-Feb. 22			Do.
Lenawee County	Mar. 29-June 7			Do.
Livingston County	Mar. 15-May 3			Do.
Luce County	Apr. 26-May 31			Do.
Mackinac County	Feb. 15-June 14			Do.
Macomb County	Feb. 15-May 31			Do.
Manistee County	do			Do.
Marquette County	Feb. 15-May 3			Do.
Mason County (Ludington)	Jan. 27-June 14	170	1	
Mecosta County	Feb. 15-June 14			Do.
Menominee County	Feb. 22-June 14			Do.
Midland County	do			Do.
Missaukee County	do			Do.
Montcalm County	Feb. 22-June 7		1	
Montmorency County	Feb. 22-May 3			Do.
Muskegon County	Feb. 22-June 14			Do.
Newaygo County	do		1	
Oakland County	Feb. 15-June 7			Do.
Oceana County	Feb. 15-Apr. 5			Do.
Ogemaw County	Feb. 15-June 7			Do.
Ontonagon County	Apr. 19-May 24			Do.
Osceola County	Feb. 15-May 24		1	Do.
Otsego County	Feb. 15-May 31			Do.
Ottawa Co nty	Feb. 15-June 14			Do.
Presque Isle County	do		1	Do.
Saginaw County	do		1	
St. Clair County	Feb. 22-Apr. 26			Do.
St. Joseph County (Three Rivers).	Mar. 22-May 17			Do.
Sanilac County	Feb. 22-June 14			Do.
Schoolcraft County	Apr. 19-May 24			Do.
Shiawassee County	Feb. 22-May 17			Do.
Tuscola County	Feb. 22-June 14			Do.
Van Buren County	Feb. 22-Apr. 26			Do.
Washtenaw County (Ann Arbor).	Jan. 12-Mar. 29	3		
Wayne County (Detroit)	Jan. 5-June 21	147	4	
Wexford County	Feb. 15-May 31			Do.
Total for State		362	14	
Minnesota:				
Aitkin County	Dec. 3-Apr. 28	21		
Anoka County	Dec. 3-May 26	50		
Becker County	Dec. 3-June 2	98		
Beltrami County	Dec. 30-June 9	272	1	
Benton County	Dec. 3-Apr. 28	10		
Big Stone County	Dec. 3-June 9	72	2	
Blue Earth County	do	209		
Brown County	Jan. 27-June 9	25		
Carlton County	June 2-June 9	2		
Carver County	Dec. 3-June 9	435	4	
Cass County	do	75		
Chippewa County	Dec. 3-June 2	21		
Chisago County	Dec. 3-Mar. 24	7		
Clay County	Dec. 3-June 9	256		
Cottonwood County	Dec. 3-May 5	36		

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

DECEMBER 28, 1901, TO JUNE 27, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Minnesota—Continued.				
Crow Wing County	Dec. 3-June 2	149	3	
Dakota County	Dec. 3-June 9	65		
Dodge County	Dec. 3-May 26	13		
Douglas County	Jan. 27-June 2	20	1	
Faribault County	Dec. 3-June 2	98		
Fillmore County	Jan. 20-May 19	31		
Freeborn County	Jan. 20-May 12	17		
Goodhue County	Dec. 3-June 2	158		
Grant County	Feb. 17-May 5	5		
Hennepin County (Minneapolis).	Dec. 3-June 9	576	2	
Houston County	Dec. 3-May 5	97	1	
Hubbard County	Dec. 3-June 9	235	2	
Isanti County	Dec. 3-May 26	24	1	
Itasca County	do	59		
Jackson County	Dec. 3-May 12	181		
Kanabec County	Dec. 3-Apr. 7	107		
Kandiyohi County	Dec. 3-June 9	54		
Kittson County	Dec. 3-Mar. 17	65		
Lac qui Parle County	Dec. 3-May 26	18		
Lake County	Feb. 17-Apr. 14	6		
Le Sueur County	Dec. 3-June 2	19		
Lincoln County	Dec. 3-June 9	154	1	
Lyon County	do	20		
McLeod County	Dec. 3-June 2	18		
Marshall County	do	127	1	
Martin County	Dec. 3-June 9	106		
Meeker County	do	81		
Millelacs County	do	100		
Morrison County	Dec. 3-June 2	85		
Mower County	Dec. 3-June 9	103	1	
Murray County	Dec. 3-Mar. 5	6		
Nicollet County	Jan. 27-June 2	21		
Nobles County	Jan. 1-June 2	46		
Norman County	Dec. 3-May 5	103	2	
Olmsted County (Rochester)	Dec. 3-Mar. 24	49		
Ottertail County	Dec. 3-May 26	156	1	
Pine County	Dec. 3-June 9	15		
Pipestone County	Dec. 3-June 2	260	1	
Polk County	Dec. 3-May 26	211		
Pope County	Dec. 3-Apr. 7	79	1	
Ramsey County (St. Paul)	Dec. 3-June 2	108		
Red Lake County	Dec. 3-June 9	178	5	
Redwood County	Dec. 3-May 12	109	1	
Renville County	Dec. 3-June 9	41		
Rice County	Dec. 3-June 2	67		
Rock County	Dec. 3-May 26	92		
Roseau County	Jan. 20-Apr. 21	13		
St. Louis County (Duluth)	Dec. 3-June 9	246	1	
Scott County	Dec. 3-May 26	64		
Sherburne County	Dec. 3-May 12	18	2	
Sibley County	Dec. 3-June 9	22		
Stearns County	do	169		
Steele County	do	35		
Stevens County	Dec. 3-May 19	20		
Swift County	Jan. 27-May 5	12		
Todd County	Dec. 3-June 9	179		
Traverse County	Dec. 3-Apr. 28	97		
Wabasha County	Dec. 3-June 2	35		
Wadena County	Dec. 3-May 26	34		
Waseca County	Jan. 27-May 26	94		
Washington County	Dec. 3-June 9	71		
Watonwan County	Dec. 3-June 2	21		
Wilkin County	Dec. 3-May 5	10		
Winona County (Winona)	do	43		
Wright County	Dec. 3-June 2	71		
Yellow Medicine County	Dec. 3-June 9	32		
Total for State		7,197	84	
Missouri:				
Carthage	Jan. 1-May 1	89		
Hannibal	Jan. 12-Apr. 30	56	1	
St. Joseph	Mar. 1-Apr. 30	200	2	
St. Louis	Dec. 16-June 8	1,599	15	
Total for State		1,944	18	

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

DECEMBER 28, 1901, TO JUNE 27, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Montana:				
Butte	Jan. 13–June 8	57	1	
Helena	Mar. 1–Apr. 30	5		
Total for State		62	1	
Nebraska:				
Adams County	Feb. 1–Mar. 20	22		
Antelope County	do	3		
Boone County	do	13		
Boyd County	do	5		
Buffalo County (including Kearney).	do	19		
Burt County	do	6		
Butler County	do	27		
Cass County	do	12		
Cedar County (including Hartington).	do	107		
Cheyenne County	do	2		
Clay County	do	17		
Colfax County	do	4		
Cuming County	do	1		
Custer County	do	4		
Dakota County	do	16		
Dawes County	do	13		
Dawson County	do	1		
Dixon County	do	6		
Dodge County (including Fremont).	do	22		
Douglas County (including Omaha and South Omaha).	July 1–June 14	1,526	8	
Fillmore County	Feb. 1–Mar. 20	1		
Furnas County	do	23		
Gage County (including Beatrice).	do	71		
Hall County	do	8		
Hamilton County	do	23		
Holt County (including O'Neil).	do	30		
Jefferson County	do	1		
Johnson County (including Tecumseh).	do	20		
Kearney County	Feb. 1–Mar. 20	10		
Keyapaha County (including Springview).	do	18		
Knox County	do	10		
Lancaster County (including Lincoln).	do	118		
Lincoln County	do	2		
Madison County	do	14		
Merrick County	do	1		
Nance County	do	1		
Nemaha County (including Auburn).	do	23		
Nuckolls County (including Hardy).	do	13		
Otoe County	do	3		
Pawnee County	do	1		
Phelps County	do	1		
Pierce County (including Plainview).	do	11		
Platte County	do	4		
Richardson County (including Falls City and Dawson).	do	28		
Sarpy County (including Bellevue).	do	26		
Saunders County (including Wahoo and Valparaiso).	do	35		
Seward County (including Tamora).	do	26		
Sheridan County	do	1		
Stanton County (including Stanton).	do	35		
Thayer County	do	3		
Thurston County	do	5		
Washington County	do	2		
Wayne County	do	10		
Webster County	do	1		
York County	do	1		
Total for State		2,406	8	

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

DECEMBER 28, 1901, TO JUNE 27, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
New Hampshire:				
Bartlett	Mar. 1–Apr. 1	2		
Berlin	do	11		
Epping	do	1		
Franklin	do	5		
Goffstown	do	1		
Grantham	do	1		
Nashua	Dec. 15–June 21	46		
Total for State		67		
New Jersey				1,549 cases and 148 deaths from smallpox were reported from the 61 sanitary districts of New Jersey, from January 1 to May 10, 1902. Of the foregoing cases 539 occurred in Newark and 545 in Hudson County
Camden County	Dec. 22–May 31	135	23	
Essex County (Newark included).	Dec. 15–June 21	799	148	
Hudson County (Jersey City included).	Dec. 23–June 8	826	75	
Passaic County	Nov. 16–June 7	13	3	
Union County (Plainfield included).	Jan. 12–May 17	29	4	
Total for State		1,802	253	
New York:				
Auburn	Apr. 1–Apr. 30	3		
Binghamton	Dec. 22–Mar. 22	30	3	5 cases from Erie County
Buffalo	June 25–June 11	355	6	Five cases from Blasd
Elmira	May 11–June 7	5	1	
Middletown	Feb. 1–Feb. 28	1		
Mount Vernon city	Jan. 12–Jan. 18	1	1	
New York	Dec. 15–June 21	1,268	260	
Niagara Falls	May 25	1		
Plattsburg	Dec. 1–Dec. 28	19		
Yonkers	Feb. 15–June 13	9	2	
Total for State		1,692	273	
North Carolina:				
Beaufort County (Washington).	Apr. 18–Apr–30	1		Imported.
Buncombe County	Nov. 1–Mar. 31	101		
Burke County	Mar. 1–Apr. 30	3		
Cabarrus County	Nov. 1–Apr. 30	138		
Caldwell County	Mar. 1–Apr. 30	3		
Carteret County (Morehead city).	Feb. 8–Feb. 28	1		On a vessel.
Caswell County	Apr. 1–Apr. 30	3		
Catawba County	do	1		
Cherokee County	Feb. 1–Mar. 31	5		
Cleveland County	Jan. 1–Mar. 31	4		
Cumberland County	do	2		
Davie County	Apr. 1–Apr. 30	1		
Duplin County	Nov. 1–Feb. 28	42		
Durham County	Nov. 1–Mar. 31	9		
Edgecombe County	Nov. 1–Jan. 31	6		
Forsyth County	Nov. 1–Apr. 30	62		
Franklin County	Mar. 1–Mar. 31	4		
Gaston County	Nov. 1–Apr. 30	50		
Graham County	Mar. 1–Mar. 31	9		
Greene County	Nov. 1–Mar. 31	18		
Guilford County	Apr. 1–Apr. 30	1		
Henderson County	Nov. 1–Mar. 31	21		
Iredell County	Nov. 1–Apr. 30	16		
Johnston County	Mar. 1–Mar. 31	1		
Lenoir County	Jan. 1–Mar. 31	1		
Lincoln County	Feb. 1–Apr. 30	9		
McDowell County	Apr. 1–Apr. 30	3		
Madison County	Jan. 1–Jan. 31	7		
Martin County	Jan. 1–Feb. 28	10		
Mecklenburg County (Charlotte).	Nov. 1–Apr. 30	234	2	
Nash County	do	34		

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

DECEMBER 28, 1901, TO JUNE 27, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
North Carolina—Continued.				
New Hanover County (Wilmington).	Mar. 7-Mar. 31	1		Imported.
Polk County	Nov. 1-Feb. 28	9		
Richmond County	Mar. 1-Mar. 31	3		
Rockingham County	Nov. 1-Apr. 30	46		
Rowan County	do	15		
Rutherford County	do	7		
Sampson County	Nov. 1-Mar. 31	41		
Stanly County	Jan. 1-Feb. 28	22		
Stokes County	Feb. 1-Feb. 28	3		
Surry County	Jan. 1-Jan. 31	1		
Swain County	Nov. 1-Jan. 31	3		
Union County	Nov. 1-Apr. 30	4		
Wake County	Apr. 1-Apr. 30	2		
Wayne County	Nov. 1-Feb. 28	33		
Wilson County	Nov. 1-Apr. 30	393	5	
Yadkin County	Apr. 1-Apr. 30	6		
Total for State		1,389	7	
North Dakota:				
Barnes County	Dec. 4-Mar. 18	53	2	
Benson County	Mar. 8-Mar. 18	4		
Bottineau County	Dec. 21-Feb. 22	2	1	
Burleigh County	Mar. 8-Mar. 18	3		
Cass County	Dec. 31-Mar. 1	47		
Cavalier County	Jan. 1-May 1	72		
Eddy County	Jan. 13-May 1	2		
Foster County	Jan. 1-Feb. 22			Several cases.
Grand Forks County	Dec. 31-May 1	184	2	
Griggs County	Dec. 27-Mar. 18	19		
Kidder County	Dec. 23-Feb. 22	9		
Lamoure County	Dec. 9-Feb. 22	6		
McHenry County	Dec. 24-Feb. 22	36		
McLean County	Feb. 1-Feb. 22	1		
Nelson County	Dec. 31-Mar. 1	60		
Oliver County	Mar. 8-Mar. 18	4		
Pembina County	Dec 31-May 1	14		
Pierce County	Jan. 1-Mar. 18	34		
Ramsey County	do	11		
Richland County	Mar. 8-Mar. 18	9		
Steele County	Dec. 30-Feb. 22	4		
Stutsman County	Dec. 31-May 1	16		
Traill County	Jan. 1-May 1	33		
Walsh County	Dec. 31-Mar. 18	45		
Ward County	July 1-May 1	179		
Wells County	Dec. 26-Mar. 1	27	1	
Williams County	Dec. 18-May 1	6		
Total for State		880	6	
Ohio:				
Allen County	Apr. 1-May 31	1		
Ashland County—				
Lake Township	Aug. 1-Jan. 31			
Troy Township	do	2		
Ashtabula County	Aug. 1-May 31	15		
Auglaize County	do	17		
Belmont County	do	28	1	
Butler County—				
Hamilton	Jan. 28-June 7	23		
Middletown	Jan. 19-Feb. 15	4		
Carroll County—				
Rose Township	Jan. 19-Jan. 31	3	1	
Champaign County—				
Urbana	do	2		
Clark County	Jan. 19-May 31	5		
Clermont County—				
Miami Township	do	1		
Clinton County	Apr. 1-May 31	5		
Coshocton County—				
White Eyes Township	Jan. 19-Jan. 31			
Crawford County—				
Auburn Township	do			
Crestline	do			
New Washington	do			

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

DECEMBER 28, 1901, TO JUNE 27, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Ohio—Continued.				
Cuyahoga County—				
Berea	Jan. 19-Jan. 31			
Cleveland	Dec. 28-June 21	209	25	
Glenville	Aug. 1-Jan. 31			
Middleburg Township	do			
Rocky River	do			
Darke County	Aug. 1-May 31	38		
Defiance County	Jan. 1-Jan. 31	36		
Delaware County—				
Delaware	Aug. 1-Jan. 31	4		
Erie County—				
Sandusky	do	4		
Fayette County	Jan. 1-May 1	25		
Franklin County	Aug. 1-May 31	19	1	
Gallia County	do	21		
Greene County	do	11		
Hamilton County—				
Cincinnati	Dec. 21-June 20	370	3	
Lockland	Dec. 21-Feb. 24	1		
Mill Creek Township	Aug. 1-Jan. 31	1		
Pleasant Ridge	do	1		
Symmes Township	do	1		
Hancock County	Aug. 1-May 31	48	2	
Hardin County—				
Ada	Aug. 1-Jan. 31			
Kenton	do			
Liberty Township	do			
McDonald Township	do			
Harrison County	Apr. 1-May 31	15	1	
Henry County—				
Napoleon	Aug. 1-Jan. 31			
Highland County	Jan. 1-May 31	25		
Hocking County—				
Logan	Jan. 1-Jan. 31			
Huron County—				
Chicago Junction	Jan. 1-Jan. 31	3		
Jackson County—				
Jefferson Township	do	7		
Madison Township	do			
Oakhill	do			
Washington Township	do	1		
Jefferson County	Aug. 1-May 31	34		
Knox County—				
Wayne Township	Aug. 1-Jan. 31	11		
Lake County—				
Mentor	do			
Lawrence County—				
Aid Township	do	9		
Ironton	do	1		
Licking County	Aug. 1-May 31	74		
Logan County—				
Belle Center	Aug. 1-Jan. 31	2		
Richland Township	do	3		
West Mansfield	do	4		
Lorain County	Aug. 1-May 31	37	2	
Lucas County—				
Toledo	Jan. 5-June 14	27		
Madison County—				
Monroe Township	Jan. 1-Jan. 31	1		
Mahoning County—				
Youngstown	Dec. 22-June 14	56	12	
Medina County	Apr. 1-May 31	9		
Mercer County	Aug. 1-May 31	122		
Miami County	Apr. 1-May 31	8		
Monroe County	Aug. 1-May 31	7	1	
Montgomery County	do	20		
Morrow County—				
Cardington	Aug. 1-Jan. 31	1		
Muskingum County				
Brush Creek Township	do	1		
Zanesville	do	1		
Paulding County	Apr. 1-May 31	28		
Perry County—				
Hopewell Township	Aug. 1-Jan. 31	1		
New Lexington	do	4		
Portage County	Aug. 1-May 31	1		
Preble County—				
Gratis Township	Jan. 1-Jan. 31	3		

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

DECEMBER 28, 1901, TO JUNE 27, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Ohio—Continued.				
Putnam County	Aug. 1-May 31	1	....	
Richland County	.....do	4	....	
Ross County	Mar. 23-May 31	14	....	
Sandusky County	Aug. 1-May 31	61	....	
Scioto County	.....do	30	....	
Seneca County—				
Big Spring Township	Aug. 1-Jan. 31	1	....	
Fostoria	.....do	2	....	
Loudon Township	.....do	4	....	
Tiffin	.....do	....	....	
Shelby County—				
Green Township	.....do	....	....	
Orange Township	.....do	1	....	
Perry Township	.....do	....	....	
Sidney	.....do	2	....	
Stark County	Aug. 1-May 31	7	....	
Tuscarawas County—				
Fairfield Township	Aug. 1-Jan. 31	....	....	
Mineral City	.....do	8	2	
Uhrichsville	.....do	3	....	
Union County—				
Magnetic Springs	.....do	1	....	
Van Wert County	Aug. 1-May 31	20	1	
Vinton County	Apr. 1-May 31	1	1	
Warren County	.....do	3	....	
Washington County—				
Barlow Township	Aug. 19-Jan. 31	....	....	
Belpre Township	.....do	....	....	
Liberty Township	.....do	....	....	
Marietta	.....do	....	....	
Wayne County	Aug. 19-May 31	7	....	
Williams County	.....do	4	....	
Wood County	.....do	20	....	
Wyandot County—				
Carey	Aug. 1-Dec. 20	1	....	
Total for State		1,602	53	Total number of cases January 1 to December 20, 1901, 2,936; deaths, 48.
Oklahoma:				
Oklahoma County	Jan. 1-Jan. 31	35	....	
	Feb. 1-Feb. 28	30	....	
	Mar. 1-Mar. 31	25	....	
	Apr. 1-Apr. 30	35	....	
	May 1-May 31	38	....	
	June 1-June 16	15	....	
Total for Territory		178	....	
Oregon:				
Clatsop County (Svenson)	Mar. 17	1	1	
Marshfield	Dec. 1-Jan. 1	250	1	
Portland	Jan. 1-May 31	148	....	
Total for State		399	2	
Pennsylvania:				
Allegheny County	Dec. 29-June 14	200	6	
Berks County (Reading)	Jan. 21-Feb. 24	4	....	
Blair County (Altoona)	Dec. 29-Apr. 19	12	....	
Butler County	Jan. 16-Jan. 22	1	....	
Cambria County (Johnstown)	Mar. 30-June 21	28	1	
Carbon County	Feb. 10-Feb. 16	5	....	
Dauphin County (Steelton)	Feb. 16-Feb. 22	1	....	
Erie County (Erie)	Apr. 13-May 24	37	....	
Lackawanna County (Scranton).	Jan. 16-June 15	34	1	
Lancaster County	Mar. 2-May 12	51	....	
Lawrence County (New Castle).	Jan. 1-May 31	18	....	
Lebanon County	Dec. 22-Mar. 16	114	2	
Lehigh County (Allentown)	Feb. 2-Feb. 8	1	....	
Luzerne County	Dec. 26-Jan. 11	11	....	
Lycoming County (Williamsport)	Jan. 26-Feb. 1	2	....	
Montgomery County (Norristown)	Oct. 12-May 5	73	5	
Philadelphia County	Dec. 22-June 21	1,279	229	

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

DECEMBER 28, 1901, TO JUNE 27, 1902—Continued.

Place.	Date	Cases.	Deaths.	Remarks.
Pennsylvania—Continued.				
Schuylkill County (Auburn)	Nov. 17-Jan. 25	48	1	
York County (York)	Feb. 1-May 31	20	6	
Total for State		1,939	251	
Rhode Island:				
Central Falls	Feb. 18-Mar. 22	6		
East Greenwich	May 4-May 11	1		In Kent County jail.
East Providence	Apr. 27-May 4	1		
Jericho	Mar. 11-Mar. 17	1		
Manville	Dec. 1-Apr. 6	9		
Natick	Mar. 16-Mar. 22	1		
North Kingstown	Apr. 14-Apr. 21	1		
Pawtucket	Feb. 24-Mar. 22	12		
Providence	Dec. 1-June 7	42	3	
Warren	Mar. 3-Mar. 22	18		
Warwick	Feb. 23-Apr. 6	26		
Wickford	Apr. 27-May 4	1		
Woonsocket	Dec. 1-May 4	192		
Total for State		311	3	
South Carolina:				
Greenville	Dec. 15-May 3	32	3	
Charleston	Jan. 19-May 10	18		
Total for State		50	8	
South Dakota:				
Sioux Falls	Jan. 26-May 31	33		
Tennessee:				
Davidson County (Nashville)	Feb. 2-May 10	6		
Knox County (Knoxville)	Feb. 1-Feb. 28	2		
McMinn County	Dec. 15	24		
Polk County	Feb. 2-Feb. 19	4		
Shelby County (Memphis)	Dec. 22-May 31	249	4	
Total for State		285	4	
Texas:				
Fort Worth	Jan. 1-Jan. 31	8		
Galveston	Mar. 14-Mar. 17	3		
Houston	Jan. 1-Mar. 8	186	3	
Laredo	Feb. 8	1		
San Antonio	Jan. 1-Apr. 30	65		
Total for State		263	3	
Utah:				
Ogden	Jan. 1-May 31	18		
Salt Lake City	Dec. 15-June 14	38		
Total for State		56		
Vermont:				
Burlington	Dec. 15-May 3	176		
Rutland	Apr. 27-May 31	13	1	
Total for State		189	1	
Virginia:				
Cape Charles	Mar. 24-Mar. 28	2		One on schooner Elsie M. Harris and one on schooner S. H. Sharp transferred to Fishermans Island April 12.
Norfolk	Apr. 10	23		
Roanoke	Dec. 1-Apr. 30	216	3	
Total for State		241	8	
Washington				
Chehalis County	Dec. 1-Dec. 31	1		
Clallam County	Jan. 17	2		
King County (Seattle)	Nov. 1-May 1	333		
Klickitat County	Nov. 1-Dec. 1	8		

Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

DECEMBER 28, 1901, TO JUNE 27, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Washington—Continued.				
Lincoln County	Nov. 1-Dec. 13	35	1	
Pierce County (Tacoma and Steilacoom.)	Nov. 1-May 25	193	6	
Spokane County (Spokane)	Nov. 1-Feb. 22	143	....	
Whitman County	do	5	....	
Total for State		720	7	
West Virginia:				
Wheeling	Mar. 16-Apr. 12	4	....	
Wisconsin:				
36 counties, 61 places	Jan. 1-Jan. 31	239	1	
35 counties, 57 places	Feb. 1-Feb. 28	256	3	
37 counties, 73 places	Mar. 1-Mar. 31	304	1	
37 counties, 64 places	Apr. 1-Apr. 30	276	2	
45 counties, 85 places	May 1-May 31	358	....	
41 counties, 67 places	June 1-June 30	288	3	
32 counties, 52 places	July 1-July 31	268	....	
27 counties, 36 places	Aug. 1-Aug. 31	128	2	
15 counties, 18 places	Sept. 1-Sept. 30	71	3	
28 counties, 62 places	Oct. 1-Oct. 31	519	2	
42 counties, 100 places	Nov. 1-Nov. 30	596	3	
57 counties, 162 places	Dec. 1-Dec. 31	1,012	2	
61 counties, 232 places	Jan. 1-Jan. 31	1,521	8	
Fond du Lac	Jan. 17-Mar. 1	10	....	
Green Bay	Dec. 30-June 15	186	4	
Janesville	Apr. 13-June 8	13	....	
Manitowoc	Mar. 1-Mar. 31	20	....	
Milwaukee	Dec. 29-June 21	98	....	
Total for State		6,163	34	
Grand total		38,361	1,277	

FOREIGN AND INSULAR.

CHOLERA.

During the year cholera has shown a decided increase in the number of cases and number of countries invaded. It was reported present in Borneo, at Banjermassin; China, at Canton, Fatshan, Honan, Hongkong, Seungshan, Shanghai, Sheshing, Tientsin, and Tung Mun; Egypt, at Suez (imported); India, at Bombay, Calcutta, and Madras; Japan, at Formosa, Karatsu, and Yokohama; Java, at Batavia, Samarang, and Soerabaya; Philippine Islands, at Manila, and in the provinces of Albay, Bataan, Batangas, Bulacan, Camarines, Cavite, Ilocos Norte, Laguna, Leyte, Nueva Ecija, Pampanga, Pangasinan, Rizal, and Samar; Straits Settlements, at Singapore; Sumatra, at Padang and Palembang; and Turkey, at Djiddeh, Mecca, Medina, Rebuk, and Tor.

About March 20 cholera appeared in Manila, probably having been imported by means of vegetables shipped from Canton, China. From this time to June 7 there were reported as occurring in Manila and other provinces 6,184 cases and 4,621 deaths from cholera.

Cholera as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

JUNE 28, 1901, TO DECEMBER 27, 1901.

[Reports received by the Surgeon-General United States Marine-Hospital Service from United States consuls through the Department of State and other sources.]

Place.	Date.	Cases.	Deaths.	Remarks.
Borneo:				
Bandjermasin	Aug. 1-Aug. 31	100	69	
Egypt:				
Suez	Sept. 21	6	1	On ship Inchmoor during voyage from Soerabaya
India:				
Bombay	May 22-Nov. 26		107	
Calcutta	May 19-Nov. 23		682	
Madras	May 18-Nov. 15		997	
Japan:				
Formosa, Tamsui	May 1-June 30	5	1	
Onsen District	Sept. 1-Sept. 14	1	0	
Yokohama	July 14-Sept. 30	8	3	
Java:				
Batavia	June 2-Nov. 9	705	594	
Soerabaya	Aug. 1-Aug. 31	1,800	1,400	
	Oct. 6-Oct. 19	520	350	
Samarang	Aug. 1-Aug. 31	1,050	600	
Straits Settlements:				
Singapore	May 23-Nov. 9		30	
Sumatra:				
Padang	Sept. 1-Sept. 8	1	1	
Palembang	July 13-Aug. 31	87	52	

DECEMBER 28, 1901, TO JUNE 27, 1902.

China:				
Canton	Feb. 24-Apr. 5	13	12	
Fatshan	Mar. 22			Raging.
Honan	Apr. 10			Epidemic.
Hongkong	Mar. 6		1	
	Mar. 4-May 17	254	227	
Seungshan	Mar. 19			Spreading.
Shanghai	June 17			Increasing.
Sheshing	Mar. 29			Reported.
Tientsin	June 14			Present
Tung Mun	Mar. 29			Reported
India:				
Bombay	Nov. 28-May 27		65	
Calcutta	Nov. 24-May 24		1,869	
Madras	Nov. 16-May 9		99	
Japan:				
Karatsu	June 23			Present.
Java:				
Batavia	Nov. 17-Dec. 14	48	27	
Soerabaya	Feb. 23-Mar 8	18	16	
Philippine Islands:				
Manila	Mar. 20-May 10	828	667	
Albay Province	Mar. 30-May 10	3		
Bataan Province	do	924	703	
Bulacan Province	do	383	356	
Camarines Province	do	896	670	
Cavite Province	do	16	13	
Ilocos Norte Province	do	3	3	
Laguna Province	do	25	18	
Leyte	do	4	3	
Nueva Ecija	do	5	5	
Pampanga Province	do	457	331	
Pangasinan	Mar. 20-May 10	3	3	
Rizal Province	do	447	267	
Straits Settlements				
Singapore	Oct. 1-Apr. 26		195	
Turkey:				
Djiddah	Feb. 19-Apr 7	3,000	1,439	Estimated.
Mecca	do		854	
Medina	Mar. 6-Mar. 27		381	Among pilgrims.
Rebuk	To Mar. 27		1	
Tor	To Apr. 30	43	25	

YELLOW FEVER.

Yellow fever was reported present in Brazil: Bahia, Para, Pernambuco, and Rio de Janeiro. British West Indies: Barbados. Colombia: Bocas del Toro and Panama. Costa Rica: Port Limon. Cuba: Casilda, Cienfuegos, Cumanayagua, Daiquiri, Habana, Marianao, Matanzas, Pinar del Rio, Regla, Santa Clara, Santiago, and Trinidad. Dutch Guiana: Paramaribo. Dutch West Indies: Curaçao. French Guiana: Cayenne. Hayti: Cape Haitien and Port au Prince. Jamaica: Kingston and Port Royal. Mexico: City of Mexico, Merida, Progreso, Tampico, Valladolid, and Vera Cruz. Porto Rico: San Juan. Salvador: San Salvador. Venezuela: Puerto Cabello. Windward Islands: St. Lucia.

While present in more countries during the year just ended there is a decided decrease in the number of cases. In many instances only one or a few cases have occurred, and often these were imported and did not extend beyond the original focus.

Brazil and Mexico furnished by far the greatest number of cases of this disease, about 862 deaths, something like eight times as many as occurred in all other countries together. During the six months ended December 31, 1901, Cuba reported 61 cases and 14 deaths from yellow fever, and during the six months ended June 30, 1902, 1 case and no deaths: this an imported case.

Yellow fever as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

JUNE 28, 1901, to DECEMBER 27, 1901.

[Reports received from United States consuls through the Department of State and from other sources.]

Place.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Para	Oct. 1–Oct. 31	177	56	
Pernambuco	May 17–Oct. 15		7	
Rio de Janeiro	May 15–Nov. 10		89	
Colombia:				
Bocas del Toro	June 26–Oct. 25	11	1	
Costa Rica:				
Port Limon	July 4–Oct. 12	29	17	
Cuba:				
Casilda	Sept. 29–Oct. 5	1		
Cienfuegos	July 15–July 18	2		
Cumanayagua	Aug. 18–Aug. 24	1		
Daiquiri	Sept. 8–Sept. 14	1		
Habana	June 28–July 27	7		Six from Santiago de las Vegas,
	July 28–Aug. 10	6	1	One from Regla, one from San Antonio de los Banos, one from steamship Monterey, and one from Finca Riquena. Seven cases and three deaths resulted from inoculation by the mosquito.
	Aug. 10–Aug. 31	13	5	
	Sept. 1–Oct. 26	11	2	One from Santiago de las Vegas.
	Dec. 1	2	1	One case from British steamship Ardanmohr, one death from Spanish steamship Buenos Aires.
Marianao	July 28–Aug. 10	1	1	
Matanzas	July 21–July 27		1	
	Aug. 25–Aug. 31	2		
	Sept. 1–Oct. 22	3	1	
Pinar del Rio	July 28–Aug. 3	1		
Regla	do	1	1	
Santa Clara	Oct. 26	2		
Santiago	Sept. 20	6	1	On steamship Ethelbryhta.
Trinidad	Oct. 1	1		
Dutch West Indies:				
Curaçao	Sept. 22–Dec. 6	13	4	

Yellow fever as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

JUNE 28, 1901, TO DECEMBER 27, 1901—Continued.

Place.	Date	Cases.	Deaths.	Remarks.
Haiti:				
Cape Haitien	Oct. 5	1		
Port au Prince	Aug. 20–Aug. 26	1	1	
Jamaica:				
Kingston	June 15		1	
Mexico:				
Merida	June 14–Sept. 28		16	
Progreso	July 22–Oct. 6	5	3	Two cases from steamship Mathilda.
Tampico	July 26–Aug. 22	2	1	From steamship ——— from Progreso: one from steamship Yucatan from Vera Cruz.
Valladolid	Sept. 23–Sept. 28		4	Endemic.
Vera Cruz	June 23–Dec. 14	221	94	
Porto Rico:				
San Juan	July 16	1		On steamship Saint Simon from Cape Port au Prince and Santo Domingo.
Salvador:				
San Salvador	June 20			Several cases.
Windward Islands:				
St. Lucia	Dec. 2–Dec. 6	8	6	
DECEMBER 28, 1901, TO JUNE 27, 1902.				
Brazil:				
Bahia	Dec. 1–Dec. 7	1	1	
Pernambuco	Mar. 16–May 15		2	
Rio de Janeiro	Nov. 11–May 4		463	
British West Indies:				
Barbados	Dec. 13			Prevalent.
Colombia:				
Panama	Apr. 22–May 12	8	6	
Costa Rica:				
Port Limon	Apr. 16	3	1	
	May 1–June 5	5		Imported.
Cuba:				
Cienfuegos	June 5	1		Do.
Dutch Guiana:				
Paramaribo	Dec. 1–Mar. 31	34	22	
Dutch West Indies:				
Curaçao	Feb. 2–Feb. 8	1	1	
French Guiana:				
Cayenne	Mar. 27	32	21	
Jamaica:				
Port Royal	Feb. 9–Mar. 1	4	1	
Mexico:				
City of Mexico	Apr. 12–Apr. 18		1	
Tampico	June 2	1		Imported.
Vera Cruz	Dec. 15–June 7	230	125	
Venezuela:				
Puerto Cabello	Feb. 9–Feb. 15	1	1	

PLAGUE.

During the year plague was reported in Africa (except Egypt): Cape Town, Lourenço Marquez, Maitland, Mozambique, Port Elizabeth, Simonstown, and Zanzibar. Australia: Brisbane, Newcastle, and Sydney. Brazil: Pernambuco and Rio de Janeiro. China: Amoy, Canton, East Honam, Hongkong, Kityang, Niuchwang, Pakhoi, Shanghai, Sheck Lung, Shuitung, Taileung, Tsang Shing, Tung Kun, Yeungkong, and Kwangtung. Egypt: Aboussir, Achmoun, Alexandria, Benha, Damanhour, Damietta, Dechneh, Kafr Enon, Kafr Rabieh Korachieh, Kom el Nour, Mansura, Menouf, Minieh, Mit Gamr, Mit Sammanud, Nahtai, Port Said, Tantah, Tola, Toukh, Zagazig, and Ziftah. England: Liverpool (imported). Formosa. France: Le Frioul and Marseille (imported). Hawaiian Islands: Honolulu and Kauai Island. India: Bombay Presidency and Sind, including the Northern, Central, and Southern divisions, and political charges, Madras Presidency with its divisions and provinces, and various states and districts. Italy: Naples (imported). Japan (excepting Formosa): Nagasaki and Yamanashi Ken (imported). Madagascar: Majunga. Mauritius. Paraguay: Asuncion (imported). Philippine Islands: Cavite, Cebu, Concepcion, Malabon, Malolos, Manila, Naic, Parañaque, San Antonio, Santa Rosa, and Taguig. Russia: Batoum and Odessa. Scotland: Glasgow (imported). Straits Settlements: Singapore. Syria: Beirut. Turkey: Bagdad, Constantinople, Sansoum, and Smyrna.

Plague was reported in 22 countries, including the United States, as compared with 24 countries the preceding year. India furnished so many cases that the number furnished by all other countries combined is insignificant in comparison. Thus from May 12, 1901, to April 26, 1902, there were reported from India 421,673 deaths from plague, while during the same period there were reported from the other 23 countries together, 7,699 deaths—a proportion of about 54 to 1. It is interesting to observe that the number of deaths in India approximates that for the preceding year, 1900–1901, when it was 468,887.

Plague as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

JUNE 28, 1901, TO DECEMBER 27, 1901.

[Reports received from United States consuls through the Department of State and from other sources.]

Places.	Date.	Cases.	Deaths.	Remarks.
Africa:				
Cape Town	Feb. 16–Aug. 17	737	355	
Maitland	June 9–June 15	2		
Port Elizabeth	June 9–July 27	83	13	
Simonstown	June 9–June 15	1		
Australia:				
Brisbane	Mar. 1–June 30	24	9	
Brazil:				
Rio de Janeiro	July 3–Nov. 10		114	
China:				
Amoy	May 26–Sept. 1	5,460	700	Estimated.
Canton	June 8			Prevailing.
Hongkong	May 19–Oct. 5	1,035	1,005	
Niuchwang	Aug. 30	2		
Shanghai	June 9		1	From steamship Empress of China.
Sheck Lung	June 8			Prevailing
Tung Kun	do			Do.
Egypt:				
Alexandria	Apr. 7–Nov. 20	52	26	
Benha	do	5	3	
Mansura	do	1	1	
Minieh	do	5	1	
Mit Gamr	do	20	11	
Port Said	do	26	16	
Zagazig	do	77	32	
Ziftah	do	5	4	
England:				
Liverpool	Oct. 26–Nov. 7	5	3	
France:				
Le Frioul	July 7	15		From steamship Laos from Port Said.
Hawaiian Islands:				
Honolulu	May 31–Dec. 10	10	10	
Kauai Island	Nov. 13	2	2	
India:				
Bombay Presidency and Sind—				
Northern Division—				
Bombay city	May 12–Nov. 16	3,879	3,954	
Broach district	do	1,242	1,248	
Kaira district	do	179	124	
Surat district	do	3,202	1,695	
Thana district	do	1,352	1,169	

Plague as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

JUNE 28, 1901, TO DECEMBER 27, 1901—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India—Continued.				
Bombay Presidency and Sind—Continued.				
Central Division—				
Khandesh district	May 12-Nov. 16	775	615	
Poona district	do	1,176	766	
Poona city	do	681	495	
Satara district	do	20,489	14,178	
Sholapur district	do	283	201	
Southern Division—				
Belgaum district	do	26,358	19,730	
Bijapur district	do	21	14	
Dharwar district	do	25,773	17,264	
Hubli town	do	2,670	2,426	
Kanara district	do	389	276	
Kolaba district	do	832	622	
Ratnagiri district	do	144	108	
Sind—				
Hyderabad district	do	6	2	
Karachi district	do	40	32	
Karachi city	do	665	523	
Political charges—				
Aundh state	do	652	420	
Baroda state	do	509	324	
Bhavnagar town	do	1	....	
Cutch state	do	1,215	1,043	
Janjira state	do	14	12	
Kathiawar state	do	443	393	
Kolhapur and southern Mahratta country.	do	22,741	13,908	
Sachin state	do	52	29	
Savanur state	do	67	39	
Outside Bombay Presidency and Sind—				
Madras Presidency—				
Salem district	do	418	274	
Bengal—				
Bhagalpur division	do	32	31	
Burdwan division	do	8	9	
Calcutta	do	503	490	
Chota Nagpur division	do	76	53	
Orissa division	do	0	0	
Patna	do	2,026	1,540	
Presidency	do	6	5	
Northwest Province and Oudh—				
Agra division	do	3	2	
Allahabad	do	147	132	
Benares	do	....	449	
Punjab Province—				
Delhi division	do	590	279	
Jullunder division	do	3,425	1,608	
Lahore division	do	1,884	926	
Rawalpindi	do	2,071	1,174	
Mysore state—				
Bangalore city	do	268	209	
Bangalore civil and military station.	do	163	114	
Bangalore district	do	1,326	1,015	
Chitaldrug district	do	151	105	
Kadur	do	197	125	
Kolar district	do	177	121	
Mysore city	do	2,028	1,526	
Mysore district	do	2,189	1,671	
Shimoga	do	371	203	
Rajputana state	do	8	6	
Tumkur district	do	160	97	
Kashmir	do	363	184	
Italy:				
Naples	Sept. 7-Oct. 12	26	8	
Japan:				
Formosa	Jan. 1-Sept. 30	4,285	3,441	
Nagasaki	Jan. 4-July 18	....	2	On steamship Kintuck and on steamship Empress of China.
Yamanashi Ken	June 22	1	1	
Mauritius	June 7-Oct. 24	193	180	
Mozambique:				
Magude	Nov. 19	5	....	
Paraguay:				
Asuncion	June 23	1	....	

Plague as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

JUNE 28, 1901, TO DECEMBER 27, 1901—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Philippine Islands:				
Cavite	May 19–July 6	4	1	
Cebu	July 6	2		
Concepcion	do	1		
Manila	May 11–Oct. 26	230	189	
Malolos	July 6	3		
Malabon	do	6		
Naic	do	3		
Paranaque	do	3		
San Antonio	do	1		
Santa Rosa	May 19–July 6	2		
Taguig	Sept. 8–Sept. 14	1	1	
Russia:				
Batoum	Nov. 30	1		
Odessa	Nov. 10			Reported.
Scotland:				
Glasgow	Oct. 19–Nov. 1	5	1	
Straits Settlements:				
Singapore	July 14–July 27		2	
Turkey:				
Constantinople	Apr. 27–Sept. 12	20	5	
Samsoun	Oct. 11			Do.
Smyrna	Sept. 28			Do.

DECEMBER 28, 1901, TO JUNE 27, 1902.

Places.	Date.	Cases.	Deaths.	Remarks.
Africa:				
Lourenço Marquez	Jan. 1–Jan. 31		1	
Mossel Bay, Cape Colony	Dec. 6			Reported.
Zanzibar, Nairobi	Mar. 20	20	5	
Australia:				
Brisbane	Dec. 1–Dec. 31	1		
Newcastle	Mar. 21			Do.
Sydney	Nov. 14, 1901–Apr. 22, 1902.	104	1	
Brazil:				
Pernambuco	Mar. 16–Apr. 18		53	
Rio de Janeiro	Nov. 11–Mar. 2		105	
China:				
Canton	May 16			Epidemic.
East Honam	May 1			Do.
Hongkong	Dec. 8–May 10	81	70	
Kityang	May 16			Do.
Pakhoi	Apr. 25			Do.
Shuitung	Feb. 16		100	Declared.
Taileung	May 16			Epidemic.
Tsang Shing	To Mar. 9		20	
Yeungkong, Kwangtung	Apr. 12			Epidemic in vicinity.
Egypt	Apr. 7, 1901–Apr. 7, 1902.	382	228	
Aboussir	Apr. 7, 1901–May 21, 1902.	8	2	
Achmoun	do	6		
Alexandria	do	70	35	
Benha	do	14	7	
Damanhour	do	5	5	
Damietta	do	2	2	
Dechneh	do	50	34	
Kafr Enon	do	1	1	
Kafr Rabieh	do	6	4	
Kom-el-Nour	do	27	8	
Korachieh	do	2	1	
Mansourah	do	1	1	
Menouf	do	6	6	
Minieh	do	50	18	
Mit-Gamr	do	30	14	
Mit-Sammanud	do	9	4	
Nahtai	do	6	4	
Port Said	do	26	16	
Tantah	do	102	82	
Tola	do	29	18	
Toukh	do	17	9	
Zagazig	do	77	32	
Ziftah	do	14	12	
Formosa	Oct. 1–Mar. 31	623	454	
France:				
Marseille	Dec. 1	1		On steamship Pehio, from Batoum.

Plague as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

DECEMBER 28, 1901, TO JUNE 27, 1902—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Hawaiian Islands:				
Honolulu	Dec. 11-May 31		24	
Kauai, Eleele	Jan. 23-Jan. 24		2	
India:				
Bombay Presidency and Sind:				
Northern Division—				
Ahmedabad city	Nov. 17-Apr. 26	8	8	
Bombay city	do	13,356	10,883	
Broach district	do	2,961	1,945	
Kaira district	do	7,336	5,006	
Surat district and town	do	2,131	1,620	
Thana district	do	726	629	
Central Division—				
Ahmednagar district	do	48	38	
Khandesh district	do	11,356	8,689	
Nasik district	do	1,468	1,108	
Poonah district and city.	do	5,760	4,831	
Satara district	do	22,649	16,892	
Sholapur district and town.	do	2,348	1,457	
Southern division—				
Belgaum district	do	18,574	14,206	
Dharwar district	do	16,617	12,229	
Hyderabad town and district.	do	1,674	1,024	
Hubli town	do	334	375	
Kanara district	do	399	227	
Kolaba district	do	339	383	
Ratnagiri district	do		590	
Karachi city and district.	do	1,746	1,476	
Political charges—				
Aundh state	do	632	385	
Baroda state	do	3,614	2,520	
Cutch state	do	1,023	859	
Kathiawar state	do	510	316	
Kolhapur and Southern Mahratta country.	Nov. 17-Apr. 19	14,971	10,564	
Sachin state	do	178	118	
Savanur state	do	361	529	
Outside Bombay Presidency and Sind—				
Madras Presidency	do	7,421	6,268	
Bengal—				
Bhagalpur	do	608	538	
Burdwan division	do	172	139	
Calcutta	do	5,992	5,492	
Chota Nagpur division	do	588	491	
Orissa	do	3	3	
Patna	do	14,846	3,636	
Northwest Province and Oudh—				
Allahabad division	do	9,364	8,982	
Benares division	do	8,118	8,058	
Punjab—				
Delhi division	do	96,288	70,657	
Jullunder division	do	94,048	77,146	
Lahore division	do	34,298	10,311	
Rawalpindi division	do	31,707	20,568	
Mysore state—				
Bangalore city, district, and military station.	do	5,105	3,970	
Chitaldrug district	do	179	695	
Kadur district	do	447	298	
Kolar district and gold fields.	do	215	163	
Mysore city and district.	do	3,699	2,831	
Shimoga district	do	670	475	
Tumkur district	do	65	52	
Hyderabad state	do	1,878	1,465	
Kashmir—				
Jammu Province	do	9,312	5,575	
Totals for India	Fiscal year 1902	590,831	420,382	

Plague as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

DECEMBER 28, 1901, TO JUNE 27, 1902—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Japan:				
Nagasaki	Mar. 13	1	....	Reported on steamship Taichu Maru from Formosa.
	May 13	1	1	Imported from Formosa.
Madagascar:				
Majunga	May 28	....	....	Present.
Mauritius	Nov. 29–Apr. 10	256	151	
Philippine Islands:				
Cebu	Apr. 18–Apr. 29	2	1	
Manila	Dec. 1–Dec. 14	5	5	
	Feb. 9–Feb. 22	2	2	
Russia:				
Batoum	Jan. 8	1	1	
Syria:				
Beirut	Jan. 5–Jan. 11	1	1	
Turkey:				
Bagdad	Jan. 16–Jan. 23	6	4	

SMALLPOX—FOREIGN.

It was stated in the last report that smallpox had occurred in nearly every country on the globe. The same is true of the year just ended. The dissemination was about the same, but the number of cases was greater. The countries chiefly affected were Argentina, Brazil, Colombia, England, India, Italy, United States, and Uruguay.

Smallpox as reported to the Surgeon-General Public Health and Marine-Hospital Service from—

JUNE 28, 1901, TO DECEMBER 27, 1901.

[Reports received from United States consuls through the Department of State, and from other sources.]

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Aden	May 1–Nov. 16	....	4	
Argentina:				
Buenos Ayres	Apr. 1–Sept. 30	....	948	
Austria-Hungary:				
Budapest	Sept. 3–Sept. 9	2	....	
Prague	June 2–Nov. 30	57	....	
Belgium:				
Antwerp	June 2–Nov. 30	62	25	
Brussels	Sept. 29–Nov. 16	....	2	
Ghent	Sept. 7–Dec. 7	....	21	
Brazil:				
Ceara	June 1–Sept. 30	....	3	
Pernambuco	May 17–Oct. 31	....	525	
Rio	May 9–Nov. 10	....	994	
British Columbia:				
Victoria	June 16–June 30	2	....	
Canada:				
Quebec Province—				
Beauce County	May 30–Sept. 30	7	....	
Beauharnois County	May 15–May 22	8	....	
Brome County	May 15	14	....	
Chateauguay County	Apr. 11	2	....	
Compton County	July 2–July 6	1	....	
Gaspe County	June 12	26	....	
Hochelaga County	May 24–June 24	2	....	
Huntingdon County	Apr. 4	8	....	
Iberville County	May 14	4	....	
Jac. Cartier County	May 18	1	....	
Joliette County	June 20–June 23	1	....	
La Prairie County	Mar. 2–June 10	133	1	
Matane County	Apr. 10	17	....	
Missisquoi County	June 10	77	....	
Montreal County	Apr. 20–Sept. 30	6	....	

Smallpox as reported to the Surgeon-General Public Health and Marine-Hospital Servic from—

JUNE 28, 1901, TO DECEMBER 27, 1901—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Canada:				
Quebec Province—Continued.				
Napierville County	Feb. 19	22	1	
Ottawa County	Mar. 8–Sept. 30	55	1	
Pontiac County	Feb. 28–May 28	44		
Quebec City	Oct. 27–Dec. 14	154	1	
Rimouski County	Feb. 12–July 10	5	1	
St. Hyacinthe	May 18	1		
Shefford County	May 20	3		
Stanstead County	June 10–June 25	2		
Temiscouata County	June 4–June 17	1		
Terrebonne County	Apr. 22–May 9	91		
China:				
Hongkong	May 19–June 15	7	5	
Colombia:				
Bocas del Toro	Oct. 23–Oct. 29	3		
Cartagena	July 1–Nov. 24		12	
Colon	Sept. 23–Oct. 6	4		
Panama	June 18–Dec. 9	863		Deaths unknown.
Ecuador:				
Guayaquil	May 12–Sept. 21	7	4	
Egypt:				
Cairo	June 11–Oct. 14		7	
England:				
Leeds	Aug. 25–Aug. 31	1		
Liverpool	June 9–Dec. 7	14	2	
London	July 16–Dec. 7		182	
Manchester	Oct. 20–Oct. 26	1		
Southampton	Sept. 29–Oct. 5	1		
France				
Marseille	June 1–Aug. 31		8	
Nice	Aug. 1–Oct. 31		10	
Paris	June 7–Dec. 7		147	
Rheims	Oct. 14–Oct. 20	2		
St. Etienne	Oct. 15–Oct. 31	1		
Germany:				
Berlin	June 18–June 29	3		
Gibraltar	June 3–Nov. 17	6		
India:				
Bombay	May 22–Nov. 12		49	
Calcutta	May 19–Nov. 23		114	
Karachi	May 20–Oct. 20	25	14	
Madras	May 18–Nov. 15		120	
Italy:				
Milan	May 1–May 31	2		
Naples	June 10–Nov. 30	1,706	266	
Palermo	Aug. 18–Sept. 21		2	
Japan:				
Formosa, Tamsui	July 31–Sept. 30	8	8	
Nagasaki	June 11–June 30	2	1	
Osaka and Hioga	July 21–July 27	1		
Korea:				
Seoul	July 1–July 6		1	
Manitoba:				
Winnipeg	Sept. 15–Dec. 7	8		
Mexico:				
City of Mexico	June 17–Oct. 13	9	3	
Fuente	Aug. 11	3		
Hunucma	Sept. 23			Endemic.
Merida	July 7–July 13		4	
Mozambique:				
Lourenzo Marquez	Sept. 1–Sept. 30		1	
Netherlands:				
Rotterdam	June 16–Aug. 10	21	2	
New Brunswick:				
St. John	Oct. 20–Dec. 14	78	20	
Nova Scotia:				
Halifax	Sept. 1–Dec. 14	97	2	Thirteen from schooner Thalia, two from schooner Goodwin, and one from schooner Essex.
Windsor	Dec. 1–Dec. 14	2		
Philippine Islands:				
Manila	May 12–Sept. 28	26		
Prince Edward Island:				
Georgetown	Dec. 2	1		On schooner Robin Hood.
Russia:				
Moscow	May 26–Nov. 23	152	52	
Odessa	June 2–Nov. 30	41	9	
Riga	Jan. 1–June 30		74	
St. Petersburg	June 2–Nov. 30	72	9	
Warsaw	May 26–Nov. 29		42	

Smallpox as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

JUNE 28, 1901, TO DECEMBER 27, 1901—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Scotland:				
Dundee	July 14–Sept. 28	18	....	
Edinburgh	Sept. 1–Sept. 7	1	....	
Glasgow	June 15–Dec. 18	58	4	
Sicily:				
Messina	June 9–Aug. 31	136	27	
South Africa:				
Lorenço Marquez	Aug. 1–Aug. 31	....	2	
Spain:				
Barcelona	Oct. 16–Nov. 30	....	9	
Corunna	June 28–Dec. 7	....	6	
Madrid	May 4–Sept. 9	....	43	
Malaga	July 1–Oct. 31	....	34	
Valencia	July 28–Nov. 30	557	70	
Vigo	Nov. 1–Nov. 30	....	1	
Straits Settlements:				
Singapore	July 14–Oct. 5	....	2	
Switzerland:				
Geneva	June 2–June 29	5	....	
Uruguay:				
Montevideo	May 11–Oct. 31	548	53	
Wales:				
Cardiff	June 9–June 15	2	....	

DECEMBER 28, 1901, TO JUNE 27, 1902.

Argentina:				
Buenos Ayres	Oct. 1–Mar. 31	....	203	
Austria-Hungary:				
Budapest	Jan. 15–Jan. 21	11	....	
Prague	Dec. 1–May 24	173	....	
Barbados	Mar. 31–Apr. 5	15	1	
Belgium:				
Antwerp	Dec. 10–May 24	178	43	
Brussels	May 10–May 17	....	1	
Ghent	Dec. 8–May 3	....	28	
Liege	Mar. 9–May 3	....	2	
Brazil:				
Bahia	Jan. 12–Jan. 25	2	1	
Ceara	Dec. 1–Dec. 31	....	1	
Rio de Janeiro	Nov. 11–May 4	....	488	
Pernambuco	Nov. 1–May 15	....	505	
British Columbia:				
Vancouver	Apr. 1–May 31	6	....	
Victoria	Jan. 5–Jan. 11	1	....	
Canada:				
Belleville	Apr. 1–Apr. 12	20	1	
Hamilton	Mar. 1–May 3	3	....	
Quebec	Dec. 15–June 7	589	11	
China:				
Hongkong	Feb. 2–May 10	48	43	One from Swatow on steamship Pelus, and one from Straits Settlements on steamship Honey Bee.
Colombia:				
Cartagena	Nov. 25–Apr. 27	....	37	
Panama	Dec. 17–May 12	80	40	
Cuba:				
Ciego de Avila, Puerto Principe.	Jan. 12	1	....	From Canada.
Guantanamo	Feb. 18	1	....	
Habana	May 7	1	....	On steamship Alfonso XII.
Ecuador:				
Guayaquil	Sept. 28–Dec. 7	....	30	
Egypt:				
Cairo	Apr. 2–Apr. 8	....	1	
England:				
Birmingham	Feb. 16–May 31	23	1	
Bradford	Apr. 18–May 3	1	....	
Bristol	Jan. 5–Jan. 11	1	1	
Leeds	Mar. 9–May 3	6	2	
Liverpool	Dec. 15–May 31	120	4	Twenty-two imported.
London	Dec. 28–May 31	7,516	1,140	
Manchester	Feb. 16–Feb. 22	1	....	
Newcastle-upon-Tyne	Dec. 22–May 17	8	1	

Smallpox as reported to the Surgeon-General Public Health and Marine-Hospital Service, from—

DECEMBER 28, 1901, TO JUNE 27, 1902—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
England—Continued.				
North and South Shields	Jan. 19–May 17	59	2	
Plymouth	Feb. 9–Apr. 12	3	1	
Sheffield	Dec. 22–Mar. 22	9	....	
Southampton	Feb. 16–Apr. 26	5	....	
Sunderland	Apr. 28–May 8	2	....	
Swansea	Feb. 22–Mar. 1	1	....	
Tottenham	do	....	1	
West Ham	do	....	7	
Formosa:				
Tamsui	Oct. 1–Jan. 31	22	....	
France:				
Lyon	Dec. 1–Dec. 7	....	1	
Marseille	Dec. 1–Apr. 30	....	11	
Nantes	do	5	....	
Nice	Nov. 1–Dec. 31	....	26	
Paris	Dec. 8–May 17	....	84	
Rheims	Jan. 6–June 8	82	25	
Roubaix	Feb. 22–Feb. 28	....	1	
St. Etienne	Feb. 14–Feb. 28	1	....	
Gibraltar	Jan. 20–Apr. 20	6	....	
Greece:				
Athens	Jan. 5–Apr. 12	2	....	
Hawaiian Islands:				
Honolulu	Apr. 9	1	....	On transport Sheridan.
India:				
Bombay	Dec. 18–May 27	....	144	
Calcutta	Dec. 1–May 24	....	97	
Karachi	Nov. 25–May 25	187	51	
Madras	Nov. 16–May 9	....	36	
Ireland:				
Dublin	Feb. 9–Apr. 19	4	....	
Italy:				
Caserta	Mar. 24	....	....	Many cases.
Milan	Nov. 1–Apr. 30	22	8	
Naples	Dec. 1–May 17	290	21	
Palermo	Dec. 29–May 24	168	53	
Rome	Dec. 15–Mar. 29	....	6	
Santa Maria Capuavetere	Mar. 24	....	....	Do.
Jamaica:				
Kingston	Dec. 22–Dec. 28	1	....	From Colon.
Port Antonio	Jan. 5–Mar. 1	3	....	
Japan:				
Nagasaki	Dec. 11–May 30	2	....	
Liberia:				
Monrovia	Dec. 8–Dec. 14	....	1	
Malta:				
Valletta	Dec. 11–Feb. 15	12	....	
Manitoba:				
Winnipeg	Dec. 8–June 7	83	2	
Mexico:				
City of Mexico	Dec. 9–June 1	108	50	
Vera Cruz	Mar. 16–June 1	32	29	
New Brunswick:				
Lynnfield	Jan. 18	1	....	
Moncton	do	1	....	
St. John	Oct. 20–Jan. 18	108	23	
Welsford	Jan. 18	1	....	
Nova Scotia:				
Dartmouth	Mar. 29	5	....	
Halifax	Sept. 23–May 31	48	7	
Windsor	Dec. 15–Jan. 25	1	....	
Philippine Islands:				
Cebu	Apr. 16–May 3	18	....	
Manila	Feb. 9–Apr. 26	12	7	
Porto Rico:				
Arecibo	Mar. 8–May 3	136	....	
Caguas	Apr. 18–May 3	36	....	
Camuy	do	56	....	
Ciales	Mar. 8–May 3	6	....	
Fajardo	do	1	....	
Hatillos	Apr. 18–May 3	7	....	
Humacao	Mar. 8–May 3	1	....	
Ponce	To June 14	74	....	
San Juan	Feb. 1–May 17	62	....	
Utuado	Apr. 18–May 3	48	....	
Russia:				
Moscow	Nov. 24–May 31	314	97	
Odessa	Dec. 1–May 24	122	29	

Smallpox as reported to the Surgeon-General Public Health and Marine-Hospital Service from—

DECEMBER 28, 1901, TO JUNE 27, 1902—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Russia—Continued.				
Riga	Jan. 25-Mar. 31		21	
St. Petersburg	Dec. 1-May 17	181	40	
Warsaw	Nov. 24-May 24		17	
Scotland:				
Dundee	Jan. 12-May 3	27		
Edinburgh	Feb. 16-Apr. 12	3		
Glasgow	Dec. 28-May 29	277	58	
Spain:				
Cartagena	Apr. 15			Epidemic.
Corunna	Dec. 1-Apr. 26		8	
Malaga	Nov. 1-Jan. 31		62	
Valencia	Jan. 1-Feb. 28	415	74	
Straits Settlements:				
Singapore	Oct. 1-Apr. 19		8	
Switzerland:				
Geneva	Mar. 9-Apr. 19	3		
Turkey:				
Smyrna	Mar. 10-May 4		3	
Uruguay:				
Montevideo	Oct. 26-Apr. 22	1,024	75	
Wales:				
Cardiff	Feb. 2-Feb. 8	1		

DIVISION OF FOREIGN AND INSULAR QUARANTINE.

(EMBRACING MEDICAL INSPECTION OF IMMIGRANTS.)

REPORT OF THE DIVISION OF FOREIGN AND INSULAR QUARANTINE (EMBRACING MEDICAL INSPECTION OF IMMIGRANTS.)

By W. J. Pettus,

Assistant Surgeon-General, Public Health and Marine-Hospital Service, in charge.

Cuba.

TRANSFER OF QUARANTINES TO CUBAN GOVERNMENT.

The Service continued to have supervision and control of all maritime quarantine matters in Cuba until May 20, 1902, upon which date the Government was turned over to the Cubans.

The following correspondence was conducted between the Treasury Department and the War Department regarding the quarantine measures which should be put into effect at the time of and after the formal transfer of Cuba:

[Letter.]

Washington, D. C., *April 16, 1902.*

Sir: I have the honor to transmit herewith a letter received from the Surgeon-General of the United States Marine-Hospital Service relative to the transfer of the quarantine system of the island of Cuba to the new Government of that island and narrating in detail the measures which will be necessary at the ports of Habana, Matanzas, Nuevitas, Santiago, and Cienfuegos to insure the protection of ports in the United States from the introduction of yellow fever from said ports in Cuba. This is to be effected by the detail of medical officers of the United States Marine-Hospital Service in the offices of the United States consuls at the ports named.

I have to request that, both in the preliminary agreements which are now being made in the arrangement of the transfer of the authority of the United States to the island of Cuba and also in the treaty which it is understood will be subsequently entered into between the two Governments, the provisions as outlined in the letter of the Surgeon-General be embodied.

Respectfully,

O. L. Spaulding,
Acting Secretary.

The Secretary of War.

[Inclosure.]

Treasury Department,
Office Surgeon-General Marine-Hospital Service,
Washington, D. C., April 16, 1902.

Sir: The matter of the transfer of authority of the United States to the new Government of the island of Cuba is one of great moment at the present time with regard to quarantine matters.

Under Executive order, the quarantine stations in the island of Cuba have been conducted through a chief quarantine officer for the whole island, located at Habana, who has had direct control over the officers detailed at the other stations.

There are, at present, 5 fully equipped quarantine stations, namely, Habana, Matanzas, Nuevitas, Santiago, and Cienfuegos. At each of these stations there has been supplied a disinfecting barge, fully equipped with the best disinfecting machinery, and, in addition, a good launch or boarding vessel and the necessary offices on shore.

In addition to these 5 regular stations there are 14 inspecting stations in charge of acting assistant surgeons of the United States Marine-Hospital Service, who have been instructed to inspect vessels and, in case of need, to remand the same to a fully equipped station. In addition to the work of inspecting incoming vessels, all of these officers of the United States Marine-Hospital Service have also inspected vessels departing for the United States, performing such disinfection thereon as might be necessary, and, furthermore, have given to all vessels leaving Cuba bills of health which, in the case of vessels leaving for ports other than those of the United States, have been of a special character, simply narrating thereon the sanitary condition of the port.

The property connected with these quarantine stations has been purchased or paid for from the revenues of the island, and is to be transferred to Cuban officers, with the exception of the disinfecting steamer *Sanator*, in Habana Harbor, which is the property of the Treasury Department.

After consultation with Governor-General Wood and Surg. A. H. Glennan, United States Marine-Hospital Service, chief quarantine officer of Cuba, who is also upon General Wood's staff, it has been determined that all property of the quarantine stations purchased from the Cuban funds should be transferred to Cuban officers, who have already been designated for the purpose, and that the quarantine functions shall also be transferred to these officers.

While thus the quarantine of incoming vessels at Cuban ports is to be transferred to Cuban officials, it is deemed essential that the inspection and certification of vessels leaving these ports for ports in the United States shall still be under accredited officers of the United States Marine-Hospital Service, as provided by the law of 1893, and as was previously done before the Spanish war, and as is customary in European ports, and it is proposed, therefore, to have, under this law of 1893, these officers detailed by order of the President in the respective consular offices.

In the performance of this duty, however, it will be necessary that the disinfecting apparatus belonging to the quarantine stations must be occasionally utilized for assuring the safety of vessels leaving for the United States, and it is necessary that some arrangement should be effected with the Cuban authorities providing for such use.

At the port of Habana it is proposed to maintain the *Sanator*, the property of the Treasury Department, equipped and ready for use for the disinfection of vessels for the United States; and as there is no other disinfecting apparatus to be used by the Cuban authorities in their administration of incoming quarantine, it is suggested that, when desired, such vessels shall be disinfected by the officers of this Service with the use of the *Sanator*, and that a reasonable fee be charged for this protection to the city of Habana and the island of Cuba.

I have, therefore, to suggest that this letter be forwarded to the Secretary of War with the request that, either by preliminary agreement with the island authorities or as a part of the treaty to be entered into between the United States and the Government of Cuba, or in both manners, this understanding be had, embracing the arrangements above detailed, namely:

1. That in Habana Harbor the United States Marine-Hospital Service will disinfect such incoming vessels as may be turned over to them by the quarantine authorities, for which a reasonable fee shall be charged; and that all vessels leaving for the United States before their bills of health are signed by the Marine-Hospital officer shall be subject to such disinfection as may be required by him, making use therefor of the Service disinfecting steamer *Sanator*.

2. That at the four remaining ports of the island equipped with disinfecting barges, the use of this apparatus, the property of the island of Cuba, will be made available for use by the officers detailed in the offices of the consulates in such disinfection of vessels bound for the United States as may be necessary; and that these barges, with their disinfecting apparatus, shall be maintained by said Cuban Government in a state of efficiency for use at any time. It will be understood that the cost of disinfectants used in disinfecting vessels bound for the United States is not a charge against the United States Government, but should be borne, either by the Cuban Government or by the vessels themselves.

3. That the United States Marine-Hospital officers stationed at the several Cuban ports, will, on request, give such assistance in the matter of maritime quarantine as may be desired.

In accordance with this understanding, it is proposed to detail medical officers of the United States Marine-Hospital Service in the United States consulates at Habana, Matanzas, Nuevitas, Santiago, and Cienfuegos.

Respectfully,

WALTER WYMAN,
Surgeon-General U. S. M. H. S.

The SECRETARY OF THE TREASURY.

[Letter.]

WAR DEPARTMENT,
Washington, D. C., May 14, 1902.

SIR: I have the honor to acknowledge the receipt of your letter of the 16th ultimo, inclosing a communication from the Surgeon-General of the United States Marine-Hospital Service, and recommending that the provisions suggested by him regarding the United States Marine-Hospital Service in Cuba be embodied in the preliminary arrangements pending the inauguration of the new Cuban Government and also in the treaty to be negotiated between the United States and said Government.

These communications were referred to the military governor of Cuba, and a copy of his indorsement returning the same is herewith inclosed.

There are also transmitted herewith copies of a cablegram this day sent to the military governor of Cuba and of a letter to the honorable the Secretary of State forwarding copies of the correspondence mentioned.

Respectfully,

ELIHU ROOT, *Secretary of War.*

The SECRETARY OF THE TREASURY.

[Inclosure.]

WAR DEPARTMENT,
Washington, D. C., May 14, 1902.

SIR: I have the honor to transmit herewith a copy of a letter from the honorable the Secretary of the Treasury, dated the 16th ultimo, inclosing the recommendations of the Surgeon-General of the United States Marine-Hospital Service relative to the United States Marine-Hospital Service in Cuba, and to invite attention to the indorsement of the military governor of Cuba thereon stating that he concurs in said recommendations.

There are also inclosed a copy of a cablegram this day sent to the military governor of Cuba and a copy of a letter to the honorable the Secretary of the Treasury.

Attention is likewise invited to the recommendation of the Secretary of the Treasury that the provisions suggested by the Surgeon-General be embodied in the treaty to be negotiated between the United States and the new Government of Cuba.

Respectfully,

ELIHU ROOT, *Secretary of War.*

The SECRETARY OF STATE.

[Copy of first indorsement on letter of the Secretary of Treasury, dated April 16, 1902, forwarding recommendations of Surgeon-General United States Marine-Hospital Service of same date.]

HEADQUARTERS DEPARTMENT OF CUBA,
Habana, Cuba, April 28, 1902.

Respectfully forwarded to the Adjutant-General of the Army, Washington, D. C., to Capt. C. R. Edwards, chief of the Division of Insular Affairs, requesting reference to the Hon. Secretary of War.

The within letters were left in my hands by the Hon. Secretary of War, during his recent visit in Habana, and are returned.

I fully concur in the recommendations of the Surgeon-General United States Marine-Hospital Service, and urge that they be accepted and put into effect in such manner as the Government of the United States may deem advisable.

LEONARD WOOD,
Military Governor of Cuba.

[Copy of cablegram sent May 14, 1902.]

To WOOD, *Habana:*

Take such steps as may be practicable on the part of the military government to give effect to the recommendations of the Treasury Department relative to the United States Marine-Hospital Service in Cuba, pending negotiations of treaty with the new Government.

ROOT, *Secretary of War.*

[Copy of telegram received at War Department, May 15, 1902.]

HABANA, CUBA, *May 15, 1902.*

SECRETARY OF WAR, *Washington, D. C.*

Will do all possible to give effect to the recommendations of the Treasury Department relative to the United States Marine-Hospital Service in Cuba.

WOOD, *Military Governor.*

These provisions having been approved by the War Department, a volume of quarantine regulations for Cuba was prepared, based upon the regulations of the Treasury Department, with the necessary changes. These regulations were promulgated in due form shortly before the transfer of the government.

Since May 20, officers of the Marine-Hospital Service have been detailed in the offices of the United States consuls at Habana, Matanzas, Nuevitas, Santiago, and Cienfuegos, respectively, for the purpose of carrying out the provisions of the quarantine law of February 15, 1893.

The disinfecting steamer *Sanator* is in commission in the harbor of Habana, under the control of the medical officer in command at that port, for the purpose of disinfecting all vessels requiring such treatment which leave Habana for ports of the United States.

The disinfecting apparatus at the ports of Matanzas, Nuevitas, Santiago, and Cienfuegos having been purchased from the tonnage taxes of the island of Cuba, were transferred to the Cubans with the other property, but it was stipulated that they were to be kept in a state of repair and ready for use at any time, and that they were to be placed at the disposal of the medical officers of the Marine-Hospital Service when it was considered necessary to disinfect any vessels leaving the above-named ports for ports of the United States.

RECOMMENDATIONS OF SURG. A. H. GLENNAN, M. H. S., IN REGARD TO THE QUARANTINE MANAGEMENT AFTER THE EVACUATION OF CUBA.

Doctor Glennan to remain at Habana, detailed in the office of the consul-general, he to inspect outgoing vessels, their crews and cargoes, and sign bills of health issued to same, in conjunction with the consul-general.

The *Sanator* to remain in Habana Harbor for the purpose of disinfecting vessels or effects bound to ports of the United States. The *Sanator* to be also used for incoming quarantine, at the request of the Cuban authorities, a fee for this service to be charged. The disposition of funds thus collected to be decided by the Secretary of the Treasury.

Doctor Trotter and Doctor Echemendia to remain in Habana to assist Doctor Glennan.

Doctor Frick to remain upon the *Sanator*.

Mr. W. F. Macdowell to remain as special disbursing agent to the end of the active quarantine season at least, to close up all outstanding Cuban accounts, and also to act as disbursing officer for the *Sanator* and the various officers in the island; his salary to be paid from the tonnage taxes of the island of Cuba until May 20, 1902; after that date to be paid from the epidemic fund.

The public property at Habana will be transferred to Acting Assistant Surgeon Nunez, in accordance with the recent order of General Wood. This transfer will take effect shortly before May 20.

MATANZAS.

Doctor Guitéras to be ordered from Matanzas to Tampico and Doctor von Ezdorf to be relieved at Santiago and detailed in the office of the United States consul at Matanzas, his duties to be solely outgoing quarantine. The use of the disinfecting barge at Matanzas, as well as the barges at Santiago, Nuevitas, and Cienfuegos to be determined later.

The property at Matanzas to be transferred by Doctor Guitéras to Acting Assistant Surgeon Garcia.

NUEVITAS.

Acting Assistant Surgeon Stone to be relieved and ordered home.

The property at Nuevitas to be transferred to Acting Assistant Surgeon Espin.

Acting Assistant Surgeon McConnell to be transferred from Habana to Nuevitas, for duty in the office of the consul.

SANTIAGO.

Assistant Surgeon von Ezdorf to be transferred to Matanzas, as above stated.

The property to be turned over to Acting Assistant Surgeon Wilson.

Acting Asst. Surg. A. B. McDowell to be transferred from Habana to Santiago, for duty in the consulate.

CIENFUEGOS.

Acting Assistant Surgeon Giralt to receipt for the public property to Acting Assistant Surgeon Nunez.

Acting assistant surgeon for duty in the consulate at Cienfuegos to be selected.

IN GENERAL.

All property purchased from United States funds to be transferred to the acting assistant surgeons who will serve in the consulates. If they can not make use of this property they shall request authority of the Bureau to forward same to Washington or to the medical purveyor.

The salaries of the acting assistant surgeons detailed in the consulates to be $200 a month flat.

POSTPONEMENT OF CLOSE QUARANTINE AGAINST CUBA.

[Circular.]

AMENDING UNITED STATES TREASURY QUARANTINE REGULATIONS—CUBA.

[Department Circular No. 43, 1902, Marine-Hospital Service.]

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., April 26, 1902.

Collectors of Customs, Quarantine Officers of the United States, and others concerned:

In view of the improved conditions in the ports of Cuba, and the fact that there has been no yellow fever reported in that island in 1902, to the present date, the season of close quarantine for yellow fever (i. e., the season during which detention of personnel and disinfection of vessels from infected ports is demanded) against the island of Cuba is hereby postponed to June 1, 1902, provided that the Surgeon-General of the Marine-Hospital Service is authorized to put in effect the close quarantine immediately should changed conditions require it. This postponement does not obviate the necessity of inspection, and applies only to the island of Cuba.

O. L. SPAULDING, *Acting Secretary.*

REPORTS FROM UNITED STATES QUARANTINE STATIONS IN CUBA.

There are here appended the reports of the work conducted in the five divisions of the island of Cuba.

HABANA AND SUBPORTS.

REPORT OF CHIEF QUARANTINE OFFICER FOR THE ISLAND OF CUBA, SURG. A. H. GLENNAN.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
OFFICE OF MEDICAL OFFICER IN COMMAND,
Habana, Cuba, July 21, 1902.

SIR: I have the honor to submit the following report of the operations of the quarantine service for the fiscal year ended June 30, 1902:

This report will necessarily fall into two sections, the first, from July 1, 1901, to May 20, 1902, the date of the cessation of military intervention, and the second, the consular period of the establishment of the Republic of Cuba, from May 20 to June 30, 1902.

The work of the Service has continued uniformly and effectively upon the lines established in previous years, the personnel and quarantine outfit remaining practically the same as previously reported.

During the early part of the season the boarding and inspection of vessels was embarrassed for lack of a suitable steam launch, and a small tug had been chartered for some time at considerable rental, but was inadequate for the purpose. This matter was remedied by the Bureau in obtaining authority and plans and specifications for the construction of a new steam launch by the Gas Engine and Power Company of New York. The launch was delivered in January. It is 45 feet in length, 10½ feet beam, has triple-expansion engines, evaporators, etc., and is probably the most capable and powerful boat of its size in any quarantine service.

In 1899 a temporary rough building was erected upon Caballeria wharf in front of the post-office building, primarily for the disinfection of outgoing mail, and afterwards utilized for the sterilization of baggage. After considerable time and effort, covering a period of two years, the governor-general secured control of the Commandancia de la Marina and Machina buildings, the latter a long one-story brick and cement structure adjoining the new passenger building. This one-story Machina structure was remodeled for the housing of the shore disinfecting plant by direction of the military governor. Office rooms, baths, and closets were provided in one end, and the work of installation admirably executed by the Engineer Department of the Army.

At the present time all passengers enter and depart from this one point by means of transfer steamers from the adjoining passenger building, consequently a much better supervision is maintained over outgoing passengers and their baggage. Through the kindness of General Bliss, collector of customs, I was also assigned a large office room in the southeast corner of the second floor of the passenger building, for the inspection of passengers and the issue of health certificates. This convenient office room is still retained by the Service through the courtesy of the Republic of Cuba.

Early in March, 1901, the necessity for the further protection of the island of Cuba from the premature admission of nonimmune persons exposed to yellow fever at foreign ports was recognized by this Service, as will appear in paragraphs III and IV of the copy of the following order promulgated by the military governor:

No. 78.] HEADQUARTERS DEPARTMENT OF CUBA,
Habana, March 20, 1901.

The military governor of Cuba, upon the recommendation of the chief quarantine officer for the island, directs the publication of the following additional rules to the quarantine laws and regulations of the United States, for the protection of public health in the island.

I. Vessels arriving at Cuban ports from foreign infected ports will be subjected to disinfection and quarantine detention, during the quarantine season, at the discretion of the chief quarantine officer.

II. Masters of vessels clearing from foreign ports for ports in the island of Cuba must obtain a bill of health signed by the proper officer or officers of the United States, setting forth the sanitary history and condition of said vessel, and that it has in all respects complied with the rules and regulations in such cases prescribed for securing the best sanitary condition of said vessels, its cargo, passengers, and crew. Any vessel clearing and sailing from any such port without such bill of health, and entering any port of Cuba, shall be subject to quarantine detention and disinfection.

III. Nonimmune passengers arriving in Cuba from ports infected with yellow fever or other quarantinable disease will, at the discretion of the chief quarantine officer of Cuba, be detained under observation in quarantine a sufficient length of time to cover the incubative period of the disease.

Passengers from Vera Cruz, Progreso, and other ports where medical officers of the United States Marine-Hospital Service are detailed for duty in the office of the United States consul shall procure certificates of health and immunity to smallpox from said officers prior to departure from said ports. Masters of vessels who shall attempt to transport passengers from said ports to a port in Cuba in defiance of this rule will subject themselves, vessels, crews, and passengers to quarantine detention and disinfection.

IV. Passengers from Vera Cruz, Progreso, and other yellow-fever infected ports, who are able to present certificates of immunity to yellow fever from medical officers of the Marine-Hospital Service may be passed on arrival without quarantine detention.

J. B. Hickey,
Assistant Adjutant-General.

At that time no cases of yellow fever were officially reported in Habana, and the open quarantine season, by direction of the Department at Washington, was extended to April 15, 1901, and a further extension was made to May 1, 1901.

When urged by the military officials that the open season should be continued, I replied that while Habana was apparently free from yellow fever, the numerous small towns on the outgoing railway lines had received but little sanitary attention, and a development of yellow fever might occur. This prediction was fully verified in the small cigar-factory town of Santiago de las Vegas, 15 miles by rail from Habana. Nearly a dozen cases of yellow fever came into Habana from that place before the matter was taken radically in hand by the proper authorities. Nearly all of the artisan class are members of quintas, or relief societies, and if taken sick outside of Habana they are sent in to the city to relatives or hospitals for treatment. In September of 1901 this source of infection was stamped out, and there have been no cases of yellow fever officially reported in Habana since that time.

Without the knowledge of this office the following order was issued:

No. 65.] Headquarters Department of Cuba,
Habana, March 7, 1902.

The military governor of Cuba, upon the recommendation of the chief sanitary officer, city of Habana, directs the publication of the following order:

All persons nonimmune to yellow fever, coming to the city of Habana from places infected with yellow fever, shall report at such time and place as directed by the chief sanitary officer of the city of Habana. The chief sanitary officer shall be the judge as to immunity and infection, and shall serve proper notice upon persons concerned. Violations of this order shall be punished by a fine of not less than $5 nor more than $50, United States currency, or imprisonment for from one to ten days. All fines shall be assessed and collected by the sanitary department.

H. L. Scott, *Adjutant-General.*

Notwithstanding this order, I gave notice to all steamship companies and agents that on and after April 1, 1902, all nonimmunes to yellow fever from foreign infected ports would be detained at the Triscornia detention station to complete five days from ports of departure, basing my authority upon military order No. 78, dated March 20, 1901. This action was afterwards confirmed by the military governor.

Following this procedure, the result of practical experience of this Service in past years, a number of cases of yellow fever have been detected by the quarantine service, and the reinfection of the city of Habana has been prevented. I am pleased to report that since the transfer of the quarantine service to the Republic of Cuba this system established by the Marine-Hospital Service is being maintained successfully.

During this fiscal year the boarding launches, floating plants, and disinfecting machinery have been kept in good order. A new water-tube boiler was placed in the steamer *Fessenden*, and some iron rods with turn buckles for braces introduced, making the vessel substantial and practically new. At the Mariel quarantine station a considerable outfit of furniture was supplied by the Bureau, so that at the present time at least 1,000 passengers could be accommodated at that beautiful location.

INCOMING QUARANTINE.

A careful supervision of incoming vessels from foreign-infected ports and places has been continued, particularly for plague, smallpox, and yellow fever.

May 2, 1902, the Spanish steamer *Alfonso XII* arrived from ports in Spain with a case of confluent smallpox in the steerage. All unprotected persons were vaccinated, and the exposed passengers removed to the Mariel quarantine station for observation. One additional case developed at the station, but the introduction of the disease into the island was prevented.

In this way the quarantine service of the island of Cuba has been turned over to the Republic of Cuba in complete and practical operation, with trained Cuban officers to carry on the work. It is hoped that the labor of the United States, out of the practical experience of her medical officers, and their sacrifices in establishing these practical sanitary regulations, will not have been in vain.

At 12 o'clock May 20, 1902, the formal transfer of the government of intervention to the new Republic of Cuba took place at the palace in the presence of the officers of the Army, Navy, and Marine-Hospital Service in full dress; members of the Cuban congress, cabinet, Governor Jennings, of Florida, Col. William Jennings Bryan, Senator Mason, of Illinois, and other distinguished persons.

Governor-General Wood delivered the written charge for the maintenance of a stable government, and President-elect T. Estrada Palma accepted the responsibility. As will be seen in Public Health Report, Vol. XVII, No. 24, June 13, 1902, page 1381, paragraph 4, assert the obligation for continuing "The rules and regulations by the President of the United States on January 17, 1899, for the maintenance of quarantine against epidemic diseases at the ports of Habana, Matanzas, Cienfuegos, and Santiago de Cuba, and thereafter at the other ports of the island as extended and amended and made applicable to future conditions, by order of the governor-general, dated April 29, 1902, published in the Official Gazette of Habana, April 29, 1902." It will thus be seen that the obligation for the continuance of the quarantine system was accepted.

At the request of Governor-General Wood I reviewed the quarantine laws and regulations in force in Cuba since January 17, 1899, which were reenacted and made applicable to the Republic of Cuba, dated April 29, 1902, as mentioned above. These rules and regulations are now being practically observed.

THE CONSULAR PERIOD.

Upon the recommendation of this office the military governor designated Dr. Eduardo F. Nunez as chief quarantine officer for the Republic of Cuba to date from May 20, 1902, and designated the Cuban quarantine officers at the various ports of the island placed under bond to receipt and care for the quarantine property. By these advance preparations the incoming quarantine service was transferred to the new Republic in practical, running shape, and has been continued, as a whole, in pleasing contrast, with less friction and disruption than many other branches of the government. The transfer of property was complete so far as purchases had been made from insular funds, all steam boarding launches, floating and shore disinfecting plants, office furniture, stationery, even to pens and inkstands.

The Cuban quarantine officer simply continued in the daily routine of duty in which he had been trained, the responsibility of which had, as a matter of fact, been placed upon him for some little time before its official confirmation—in other words, the duties of the Marine-Hospital Service training school officially ceased May 20, 1902, and the Cuban quarantine graduates are now in command, with lines of procedure and precedents to meet every occasion which may arise.

On May 14, 1902, the following cablegram was received by the military governor:

To Wood, *Habana:*

Take such steps as may be practicable on the part of the military government to give effect to the recommendations of the Treasury Department relative to the Marine-Hospital Service in Cuba pending negotiations of treaty with new Government.

Root, *Secretary War.*

The message was referred to this office and a memorandum was prepared, which General Wood embodied in the following letter to President-elect Palma:

Headquarters Military Governor, Island of Cuba,
Habana, May 19, 1902.

Sir: I have the honor to respectfully invite your attention and request favorable consideration to the following memorandum relative to the status of the officers of the United States Marine-Hospital Service who will be stationed at Habana, Matanzas, Nuevitas, Santiago de Cuba, and Cienfuegos, to perform those duties which they perform in various foreign countries, and to request that you extend to the quarantine officers of the United States Marine-Hospital Service such consideration as will facilitate performing the duties set forth in the following memorandum:

(1) Sanitary inspectors of the Marine-Hospital Service will be stationed at Habana, Matanzas, Nuevitas, Santiago de Cuba, and Cienfuegos for the purpose of inspecting all vessels departing for ports in the United States, to sign consular bills of health.

(2) The United States disinfecting steamer *Sanator* will continue to be located in Habana Harbor for the purpose of disinfecting vessels bound for United States ports, free of charge, and disinfect incoming vessels whenever requested to do so by the proper authorities of the Cuban Republic.

(3) At the ports of Matanzas, Nuevitas, Santiago de Cuba, and Cienfuegos the floating disinfecting plants are the property of the Republic of Cuba. It is desired that they be maintained and be available for the disinfection of vessels bound for United States ports free of charge, the disinfection to be certified to by the officers of the Marine-Hospital Service at said ports.

(4) When the inspection and disinfection of the class of vessels above named is necessary, it is desired that the boarding boats now provided at these stations for the quarantine service of Cuba shall be available for use in these inspections.

(5) Until otherwise provided for in the United States consulates, it is desired that office room where there is sufficient space in the quarantine offices of the Cuban quarantine service, will be granted for the use of the sanitary inspectors of the Marine-Hospital Service.

(6) During the close quarantine season, when effects are required to be disinfected by certain State quarantines in the United States, it is desired that the shore plants now provided at the ports before mentioned shall be maintained and operated by the quarantine service of the island of Cuba, and the disinfection certified to by the sanitary inspectors of the Marine-Hospital Service.

(7) In the transaction of official quarantine business between the ports of the island of Cuba, it is desired that mail and telegraphic franking privileges may be extended to the officers of the United States Marine-Hospital Service.

Such action on the part of your Government will be highly appreciated and will do much to facilitate the operations of the representatives of the Marine-Hospital Service of the United States until such time as a definite arrangement can be made between the two countries interested.

Very respectfully,

LEONARD WOOD,
Military Governor of Cuba.

Hon. T. ESTRADA PALMA,
President-elect, Republic of Cuba, Habana, Cuba.

President Palma, upon assuming his duties as chief executive of the new republic, referred the communication to the proper officer of his cabinet, and the courtesies requested have been extended to this Service.

OUTGOING QUARANTINE.

So far as the United States is concerned, the supervision of departing passengers, cargoes, vessels, and crews, is continued as in other foreign countries, by the detail of medical officers in the offices of the United States consuls at the principal ports of the island. During the close quarantine season, none but immune passenger travel is permitted to Florida ports, and the crews of those mail steamers are immunes. Cattle vessels making quick trips to Gulf ports are also required to carry immune crews on the lines as practically established before the Spanish war. In some minor respects the office work has been simplified; passengers bound for northern ports are not required to first obtain the red certificates of health and vaccination, as the conditions which formerly made this a requisite do not now prevail. A white certificate of immunity to yellow fever is issued, however, as an accommodation to passengers entitled to it, and who may be allowed to pass through quarantine at northern ports within the five day period from port of departure.

GENERAL OBSERVATIONS.

An extended review of the great sanitary improvement in the Island of Cuba is unnecessary in this report, because the full details of these matters have been presented to you at regular periods during the past three years, and also in the sanitary publications of the military authorities. I wish, however, to invite your attention to a few facts at this time of retrospective view after the close of the American sanitary campaign in Cuba.

A systematic cleaning up of the cities and towns was immediately commenced at the beginning of the military occupation with abundance of labor and pecuniary assistance. The result has been a general lowering of the death rate all over the island from all causes. The simple fact of cleaning out foul cesspools, systematic removal of garbage, effecting surface drainage, etc., in fact the introduction of an ordinary sanitary police system caused this general reduction in the death rate by removing the breeding places of disease germs.

While large sums of money were expended in this superficial cleansing of Habana, unfortunately due to unavoidable causes, no permanent sanitary improvement of the city has been made. The results show, however, that the money was well expended, even if it was found impossible to construct the system of sewerage or even get it well under way.

In November, 1901, the military governor requested a general report of the operations of the quarantine service for the six months ended December 31, 1901. In view of the fact that consular bills of health require a statement of the conditions affecting the public health existing in the ports of departure or vicinity, and in some instances that the quarantine officer is also the health officer at some of the smaller ports, I issued the following circular letter addressed to the officers in command at the quarantine districts of Matanzas, Nuevitas, Santiago de Cuba, Cienfuegos, and through them to the subports:

Sir: You are informed that the military governor of the island desires a general report of the operations of the quarantine service for the six months ending December 31, 1901. In addition to following the form of report submitted by you during the past fiscal year I would suggest that you include the following sanitary data:

1. Give population of your port and the neighboring towns at the last military census, 1899.

(*a*) Present estimated population; if considerable increase, from what cause.

(*b*) Total number of deaths during the six months; prevailing diseases and the death rate per 1,000 for the six months.

(In estimating the death rate per 1,000 follow the rule given by P. A. Surg. G. M. Guiteras in Public Health Report No. 20, May 18, 1900.)

(*c*) What laws exist requiring the record of births, marriages, and deaths, and particularly if contagious and infectious diseases are required to be reported. If so, what if any penalty is imposed for not doing so.

2. Describe water supply; estimated supply per head per day.

(*a*) Conditions of cesspools, sewerage, drainage, etc.

(*b*) Has your port and interior towns local health boards or health officers? Give their names?

3 What proportion of the population is immune to yellow fever, and the estimated number of nonimmunes residing in each place.

4. Is vaccination practiced?

5. Has varicella or chicken pox prevailed?

The foregoing is an outline of the sanitary information desired from the port and surrounding country in each quarantine district of the island.

Copies of any printed forms, sanitary rules, and regulations are desired, and any other pertinent matter.

Respectfully,

A. H. Glennan,
Surgeon, U. S. M. H. S.,
Chief Quarantine Officer for the Island of Cuba.

The responses to this circular letter were full and interesting. They showed the marked sanitary improvement upon and near the coast line of the island made during the administration of the military governor, Brigadier-General Wood. A better understanding of proper municipal cleanliness appears to exist, and affords hope for continued hygienic improvement.

Of course many of the towns have their sanitary problems to work out, chiefly in the way of fresh-water supply, drainage, and sewerage. As it is the mortality is remarkably low. Based upon the military census of the island of Cuba, taken by the War Department in 1899, Matanzas gives a death rate of 18.50 per 1,000, Nuevitas 14.59 per 1,000, Santiago de Cuba 24.93 per 1,000, and Cienfuegos 16.82 per 1,000.

If the rate in Habana was based upon the same official census of 235,981 population, the rate of mortality, by comparison, would be a great deal higher. The chief sanitary officer of Habana, however, estimates the present population at 271,363, an increase of 35,382 in two years, which would double the population of the city in eight years. In the report of vital statistics of Habana for the year 1899 the estimated population is given at 220,000 by Maj. John G. Davis, surgeon, U. S. Volunteers, chief sanitary officer. This would give an increase of over 50,000 persons in two years to December 31, 1901, a rate of increase, in either case, which would double the population of Habana in even a less number of years, which is hardly credible.

A considerable increase has occurred from the Spanish immigration. The statistics of the superintendent of the immigration detention station show, however, that at least 60 per cent of the arrivals are distributed to the country districts. However, this is merely relative, and is cited to show the lower mortality rates of the other ports of the island.

It has been argued in some quarters that since it has been demonstrated that a certain mosquito propagates yellow fever, there is less immediate necessity for a sewerage system in the city of Habana. This reasoning is against the experience and teachings of all practical sanitarians. It will be immediately acknowledged that no municipality, under self-government, can or will maintain the sanitary police system established under military régime, with power and means to enforce it, nor is it to be expected.

While modern scientific thought may attribute the cause of disease as due to specific germs, it may not be used as an argument against the systematic and immediate disposal of refuse by a proper sewerage system, combined with drainage, light, ventilation, and general municipal cleanliness.

Referring more particularly to the subject of yellow fever, the principal quarantinable disease with which we have had to deal in Cuba, our experience would seem to demonstrate the following propositions:

First. Habana, the principal port of entry, has been the seat of the disease, from which point it was distributed to the other portions of the island by means of local railways and coastwise vessels.

Second. The systematic cleansing of the city, isolation of yellow-fever cases, disinfection of premises, and destruction of infected mosquitoes has removed this endemic focus in Habana.

Third. The establishment of an effective quarantine system against foreign sources of infection has rendered the accomplishment of this condition possible. This fact was proven in Porto Rico, where cases of yellow fever occurred yearly in the seacoast towns, but after the institution of a rigid quarantine system by the Marine-Hospital Service in the early spring of 1899, not a single case of yellow fever has developed in Porto Rico since that time.

Fourth. Yellow fever occurs in periods of epidemic exacerbations, followed by total or apparent cessation.

Fifth. The *Stegomyia fasciata* mosquito is found relatively prevalent at all times in Habana, upon the vessels in the harbor, at the Triscornia detention station, and other places. This mosquito simply becomes important when the infection has been introduced and the means furnished to infect this insect for the propagation of the disease.

Sixth. While internal sanitation should be practised at all times and all places upon business principles for the elimination of disease of every class, the importance of quarantine for the exclusion of yellow fever will not diminish until all danger of its introduction by means of the exposed nonimmune shall have ceased.

FINANCIAL STATEMENT.

Under the order of the President, dated March 15, 1899, the sum of $300,000 in each fiscal year was set aside for the quarantine expenses of the Island of Cuba. It may not be out of place to invite your attention to the financial statement of the quarantine service during the period of military intervention.

The yearly allotment for the up-keep of the service has always been sufficient to meet the demands upon it. The amount for the fiscal year ended June 30, 1900, was almost entirely exhausted, but the fiscal year ended June 30, 1901, shows a large reduction, the total expenditures having been $187,842.73, while for the period from July 1, 1901, to May 19, 1902, the date of cessation of military intervention, the expenses were still further reduced to $137,172.85, which would at the same ratio make the expenditures for the fiscal year about $150,000, or one-half of the allotment.

Economy consistent with good service was practised at all of the ports of the island. One of the features which I introduced was the allowance of a small increase in salaries of boats' crews in lieu of rations, the crews messing themselves to their better satisfaction, causing a considerable saving to the Service, and doing away with the considerable labor of ordering and issuing of supplies and preparation of subsistence accounts. This method has been lately introduced upon the disinfecting steamer *Sanator*, and is a distinct advantage, fuel, ice, fresh water, and laundry soap only being furnished. This system is recommended for quarantine stations in the United States.

Statistics of the operations of the Service are inclosed.

Respectfully submitted.

A. H. GLENNAN, *Surgeon*.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

Statistics Habana Quarantine Station from September 16, 1901 to June 30, 1902.

PASSENGER DEPARTMENT.	
Health certificates issued	9,116
Passengers vaccinated	148
Passengers examined and accepted for immunity	486
Passengers examined and rejected for immunity	12
DISINFECTING STEAMER SANATOR.	
Cargo vessels disinfected and cleared	77
Fishing smacks disinfected	38
Bundles of clothing and bedding disinfected	5,969
Passengers and crews inspected	2,172
Cargo vessels inspected and cleared	2
SHORE DISINFECTING PLANT.	
Pieces of baggage inspected and passed	35,729
Pieces of baggage disinfected	13,739
Pieces of baggage labeled "To be disinfected"	442
Pieces of express matter inspected and passed	2,936
Pieces of express matter disinfected	191
Pieces of freight inspected and passed	96,035
Pieces of freight disinfected	594
Total pieces of baggage, freight, etc., handled	149,656
HARBOR DEPARTMENT.	
Incoming vessels inspected and passed	976
Incoming vessels quarantined	20
Cases of quarantinable diseases on incoming vessels	5
Crews incoming vessels inspected	39,296
Passengers incoming vessels inspected	29,372
Cases of sickness on vessels in harbor	36
Cases sent to hospital	33
Certificates issued regarding mechanical cleaning of vessels	237
Fishing smacks cleared	204
Pilots examined and passed	58
Ballast permits issued	37
Vaccination certificates issued	332
Persons vaccinated	432
Vessels cleared for United States ports	753
Vessels cleared for Cuban ports	744
Vessels cleared for foreign ports	214
Crews outgoing vessels inspected	40,574
Passengers outgoing vessels inspected	23,777
MARIEL QUARANTINE STATION.	
Smallpox suspects held under observation	756
Cases of smallpox at station	1

Vessels arriving with quarantinable diseases on board.

August 5, 1901: American steamship *Monterey* with 1 case of yellow fever. Patient removed and sent to hospital. Source of infection, Vera Cruz or Progreso.

October 7, 1901: American steamship *Havana* with 1 case of yellow fever. Patient removed and sent to hospital. Probable source of infection, Vera Cruz.

November 14, 1901: British steamship *Ardanmohr* with 1 case of yellow fever. Case removed and sent to hospital; vessel disinfected. Probable source of infection, Cartagena.

November 29, 1901: Spanish steamship *Buenos Aires* with 1 case of yellow fever. Patient removed and sent to hospital; vessel partially disinfected. Probable source of infection, Vera Cruz.

December 3, 1901: Spanish steamship *Alfonso XIII* with 1 case of smallpox. Case removed and sent to hospital, vessel partially disinfected, and immigrants remanded to Mariel quarantine station for observation. Probable source of infection, Coruña, Spain.

May 2, 1902: Spanish steamship *Alfonso XII* with 1 case of smallpox. Patient removed to hospital and vessel partially disinfected. One hundred and forty immigrants remanded to Mariel quarantine station for observation, where a case developed on the seventh day. Probable source of infection, Coruña, Spain.

April 30, 1902: American steamship *Havana* with 1 case of yellow fever. Patient landed and sent to hospital. Probable source of infection, Vera Cruz.

May 27, 1902: Spanish steamship *Leon XIII* with 1 case of yellow fever. Patient removed and sent to hospital. Probable source of infection, Vera Cruz.

June 4, 1902: American steamship *Esperanza* with 1 case of yellow fever. Patient removed and sent to hospital. Probable source of infection, Vera Cruz.

TRISCORNIA DETENTION CAMP.

Passengers detained to complete five days from Mexican port of embarkation	430

BATABANO, CUBA.

Report of transactions at the port of Batabano, Cuba, for the period from September 16, 1901, to May 20, 1902.

Vessels inspected and passed	206
Incoming crews inspected	3,150
Incoming passengers inspected	4,215
Bills of health issued	216
Crews inspected on departure	3,996
Passengers inspected on departure	3,723
Vessels disinfected	1
Deaths	70

MATANZAS AND SUBPORTS.

REPORT OF ASST. SURG. R. H. VON EZDORF.

OFFICE OF MEDICAL OFFICER IN COMMAND,
PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
Matanzas, Cuba, July 7, 1902.

SIR: I have the honor to make the following report of the transactions of the second quarantine division of the island of Cuba for the period covered by September 15, 1901, to and including May 19, 1902, together with the transactions at Matanzas, Cuba, from May 20 to June 30, 1902.

The ports included in this division are Matanzas, Cardenas, Isabella de Sagua, and Caibarien. The three last-mentioned ports are inspection stations, in charge of officers who forward their reports to this office for transmission and issue bills of health for their respective stations.

MATANZAS.

This station is a fully equipped quarantine station, with exception of facilities for the detention of persons, where vessels requiring disinfection can be so treated. The description of this station follows:

The office building.—This building is located on the corner of Pavia and Gelabert streets in Matanzas proper, which is immediately on the water front, and commands an excellent view of the bay. The rooms used as offices are on the ground floor, are completely furnished, and conveniently arranged for conducting the work. An upper floor in the house, for which there is no need, might be arranged for quarters of the station suitable for an officer.

The shore plant.—The shore plant is located immediately back of the office building, is a wooden structure 36 feet 2 inches long by 16 feet 3 inches wide; has a wooden floor and tiled roof. This building is divided into two unequal rooms by a wooden partition, the larger of which is furnished with a cylindrical Kinyoun-Francis steam chamber, 4 by 8 feet, with formalin attachment, 1 steam tubular boiler; the smaller room is used for storage of disinfecting supplies, and a coal bin is constructed therein.

All passenger baggage leaving this port and requiring inspection or disinfection is brought to this building, where it is treated as may be designated by the commanding officer.

Guardian.—The disinfecting barge *Guardian* is a floating disinfecting plant equipped with two Kinyoun-Francis steam disinfecting chambers with formalin attachments, a large erect tubular boiler, sulphur furnace, vertical engine for driving an exhaust fan, steam bichloride pump, and an auxiliary steam pump for boiler, all of which apparatus is arranged on the deck of the vessel. This apparatus is protected from the elements by a good wooden roof and special canvas coverings for the machinery.

The iron pipe from the sulphur furnace with three openings for attachment of hose is placed on the roof along one side, convenient for working when a vessel is alongside to be disinfected. Below deck in the hold are two cypress cisterns, one of which is used for fresh water, usually rain water collected from the roof and lead by pipes to the cistern; the other is used as a bichloride tank. Other apparatus, such as sulpher pots, formalin generators of the Kensington and Kuhn type, hose, and the necessary articles for making repairs, also disinfectants, are stored on this boat. The cabin is arranged for quartering the employees who are continually on the vessel. Eighty tons of soft coal are also stored on the boat, and serves as ballast. A buoy, painted yellow, about 1¼ miles from shore, marks the quarantine anchorage, and is also used for mooring the barge.

The steam launch McAdam.—This launch is used for boarding purposes and as a tender to the disinfecting barge *Guardian.* The dimensions of the launch are as follows: Twenty-eight feet long; beam, 6 feet 2 inches; draft, 3 feet; free board, 20 inches. The launch has a 7-horsepower engine, Seabury type, tubular boiler, vacuum and donkey pumps, with condensers under water along the keel.

In quarantine.—All vessels from foreign ports or foreign vessels from coastwise ports are inspected upon arrival at this port. Coastwise vessels frequently entering and leaving this port are passed without inspection. The masters of these latter vessels are then required to sign the quarantine declaration in the office as soon as practicable after arrival. No vessels were held in quarantine upon arrival after inspection during the period covered by this report.

Out quarantine.—Vessels leaving this port for ports in the United States or Cuba received bills of health issued in this office. When leaving for the United States the passengers and crew were inspected and counted. Vessels sailing for southern ports in the United States during close-quarantine season were disinfected prior to sailing.

During close-quarantine season (September 15 to November 1, 1901) passengers for the United States were required to obtain health certificates certifying to their protection from smallpox, successful vaccination or an attack of the disease being accepted as evidence of protection. In addition, when passengers presented sufficient proof to their immunity to yellow fever, by virtue of one attack of the disease or by ten years' residence in cities where the disease was endemic, a white certificate setting forth this fact was issued.

Baggage.—During close quarantine all baggage for the United States was inspected and passed when destined for some port north of the southern boundary of Maryland, and so labeled. All other baggage for ports south was disinfected.

Personnel.—The officers and employees of the second quarantine district on September 15, 1901, were as follows: P. A. Surg. G. M. Guiteras, United States Marine-Hospital Service, quarantine officer in command of district; Acting Asst. Surg. Felix Garcia, United States Marine-Hospital Service, assistant; Richard Amieva, clerk; Pablo Jorge, engineer of launch *McAdam* and of shore disinfecting plant; Manuel Fernandez, fireman of launch *McAdam* and of shore disinfecting plant; Manuel Sosa, coxswain of launch; Lorenzo Sarmiento, boatman; Eulogio Bello, engineer of *Guardian;* Florencio Gomez, watchman of *Guardian;* Diego Perez, assistant watchman; Juan Manuel Miranda, fireman; Francisco Bazo, seaman; Dionisio Montero, messenger; Manuel Fernandez y Carpintero, night watchman.

Cardenas.—Acting Asst. Surg. Enrique Saez, United States Marine-Hospital Service, in charge.

Isabella de Sagua.—Acting Asst. Surg. Pedro Garcia Riera, United States Marine-Hospital Service, in charge; Manuel Rodriguez, boatman.

Caibarien.—Acting Asst. Surg. Leoncio Junco, United States Marine-Hospital Service, in charge.

On May 19, 1902, before the quarantine service was turned over to the Cuban authorities, the personnel were as follows: Asst. Surg. R. H. von Ezdorf, United States Marine-Hospital Service, in command of district; Acting Asst. Surg. Felix Garcia, United States Marine-Hospital Service, assistant; Richard F. Amieva, clerk; Pablo Jorge, engineer of launch; Manuel Fernandez, fireman of launch; Manuel Sosa, coxswain of launch; Florencio Gomez, attendant of launch; Valentine H. Romero, engineer of *Guardian;* Juan Manuel Miranda, fireman of *Guardian;* Diego Perez, watchman of *Guardian;* Jose Forest, assistant watchman; Juan Sanchez, sailor; Dionisio Montero, messenger; Manuel Fernandez y Carpintero, night watchman.

Cardenas.—Acting Asst. Surg. Enrique Saez, United States Marine-Hospital Service, in charge.

Isabela de Sagua.—Acting Asst. Surg. Pedro Garcia Riera, United States Marine-Hospital Service, in charge; Manuel Rodriguez, boatman.

Caibarien.—Acting Asst. Surg. Leoncio Junco, United States Marine-Hospital Service, in charge.

There are no facilities for the detention of persons in quarantine nor for the treatment of sick suffering from a quarantinable disease.

The officers at subports follow the practice of "in" and "out" quarantine as outlined above, so far as it is applicable to their respective ports. Vessels requiring disinfection would be remanded to this port for treatment.

The following are the statistics of the operations of this station and substations during the period covered by September 15, 1901, to May 20, 1902:

	Matanzas.	Cardenas.	Sagua	Caibarien.
Incoming:				
Vessels inspected and passed	143	49	51	12
Vessels passed without inspection	101	200	151	148
Passengers inspected	2,381	88	236	0
Passengers passed without inspection	6	538	0	468
Crew inspected and passed	4,853	650	936	....
Crew passed without inspection	546	2,745	....	....
Outgoing:				
Vessels inspected and passed	35	34	10	8
Vessels passed without inspection	172	195	186	143
Vessels disinfected	8	....	....	....
Passengers inspected	415	70	5	195
Crew inspected	1,264	550	135	65
Crew passed without inspection	4,082	2,950	....	....
Baggage inspected and passed	101	....	....	....
Bills of health issued	207	229	196	151
Deaths reported	370	255	204	67

The transactions of the service at this port since May 20, 1902, to June 30, 1902, inclusive, is given in the following summary:

Vessels, outgoing, issued bills of health	24
Crews of outgoing vessels inspected	660
Passengers inspected	165
Immune certificates issued	1
Vessels disinfected	2

Respectfully,

R. H. VON EZDORF,
Assistant-Surgeon, P. H. and M. H. S.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

NUEVITAS.

REPORT OF ACTING ASST. SURG. E. F. McCONNELL.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
OFFICE OF MEDICAL OFFICER IN COMMAND,
Nuevitas, Cuba, September 12, 1902.

SIR: I have the honor to make the following report concerning the methods of "in quarantine" and "out quarantine," description of the equipment of this station, facilities for detaining persons under observation, and for treating the sick, etc., during the period from September 15, 1901, to June 30, 1902.

All vessels arriving from whatever port were inspected at once, and should a vessel's papers show that she came from an infected port, she was immediately placed in quarantine, a sanitary guard placed on board, and any known or suspicious cases of sickness removed to the isolation station at Cayo Puto. The vessel was then taken alongside the disinfecting barge *Safeguard* and disinfected according to the manner prescribed by the United States Quarantine Regulations. She was then allowed to discharge cargo in quarantine, all hands being inspected once daily by a medical officer of the station. At the end of the incubation period of the disease quarantined against, and no new cases occurring, the vessel was then granted free pratique. Ships arriving from noninfected ports and having no sickness on board were at once allowed to enter. Vessels bound for Gulf ports with certified immune crews, entering and leaving this port between the hours of sunrise and sunset, were allowed to proceed to their destination without disinfection.

The station is equipped with a shore disinfecting plant, a frame house located on the water front, containing a complete disinfecting plant and an office. This plant consists of one steam chamber with a formaldehyde attachment, one upright steam boiler, and an autoclave. The plant is used for the disinfection of outgoing passengers' baggage believed to be or suspected of being infected, and in the close quarantine season for the disinfection of baggage going south of the southern border line of Maryland.

For the disinfection of vessels, cargo, etc., there is attached to this station the disinfecting barge *Safeguard*. The *Safeguard* is of about 100 tons burden, equipped as follows: Two steam chambers, 1 double sulphur furnace and fan, 1 upright steam boiler, shower baths, bichloride and fire pumps, bichloride and fresh-water tanks, galvanized-iron sulphur standpipes with attachments, and steam capstan, and is in every way a complete disinfecting vessel. The *Safeguard* is capable of disinfecting two vessels at the same time.

For boarding purposes there is attached to the station the launch *Prochazka*, a triple-expansion, single-screw steamer about 65 feet in length, 10 feet beam, and capable of maintaining a speed of 12 knots per hour. The launch is thoroughly equipped for the work required.

The force maintained at this station was as follows: Two medical officers, 1 clerk, and 1 messenger; on the launch *Prochazka*, 1 coxswain, 1 engineer, 1 fireman, and 2 seamen; on the *Safeguard*, 1 boatswain, 1 engineer, and 2 seamen.

Cayo Puto, the isolation station, is situated about 2 miles south of Nuevitas and directly to the leeward, according to the prevailing winds. This isolation station was not maintained, except at such times as when a vessel arrived from an infected port or with a quarantinable disease on board; then tents were erected, nurses installed for the care of the sick, and daily inspections made by the medical officer of the hospital and detention camp.

Prior to passengers embarking for ports in the island or the United States they were required to present themselves at the office of the Marine-Hospital Service for inspection as to their general health and to exhibit satisfactory evidence of protection against smallpox.

Should a passenger desire a certificate of immunity to yellow fever, he or she was required to present certificates from persons whose integrity was personally known to the medical officer in command, certifying either to an attack of the disease or a continuous residence in places where yellow fever was endemic for ten years or more.

I am unable to find the necessary data upon which to base an intelligent report regarding the number of passengers and crews inspected, bills of health and certificates issued, baggage and vessels inspected and disinfected, or other transactions of the station for this period, as it seems my predecessor kept no records of the same on file.

Respectfully, E. F. McConnell,
Acting Asst. Surg., Public Health and Marine-Hospital Service.

The Surgeon-General Public Health and Marine-Hospital Service.

SANTIAGO AND SUBPORTS.

Report of Acting Asst. Surg. A. B. McDowell.

Public Health and Marine-Hospital Service,
Office of Medical Officer in Command,
Santiago de Cuba, July 10, 1902.

Sir: I have the honor to inclose herewith a summary report of the transactions for this port and subports, comprising the fourth quarantine division of the island of

Cuba, for the period covered by September 16, 1901, to May 20, 1902; also a summary report of the transactions at Santiago de Cuba from May 20, 1902, to June 30, 1902, inclusive.

In quarantine.—The practice at this port has been a careful inspection of all incoming vessels coming from foreign ports and of all vessels coming from another quarantine district of the island. Regular coastwise vessels and vessels from the subports in this district entered without inspection, the masters of said vessels being required to sign the quarantine declaration in the office immediately or as soon as practicable after arrival.

During this period one vessel was held in quarantine and disinfected before issuing pratique. This was the British S. S. *Ethelbrytha*, which had 11 cases of yellow fever and 1 death after arrival from Jacksonville, Fla. A detailed report of this vessel was made at the time.

Out quarantine.—All vessels leaving for ports in the United States or Cuban ports controlled by the United States received bills of health prior to sailing. An inspection of the vessel, cargo, and crew was made previous to issuing bill of health to vessels leaving for the States. During close quarantine season passengers were examined as to their health and protection against smallpox by vaccination or previous attack of the disease, and a certificate issued to that effect.

Vessels for Porto Rico were disinfected the year around, all baggage of passengers disinfected or inspected and passed. Health certificates were issued to passengers certifying to their protection from smallpox. Two vessels a month made the trip regularly.

At the subports the practice of in and out quarantine is the same. Should a vessel require disinfection it would be remanded to this station for treatment.

No quarantinable disease was reported during the period covered by this report at this port and subports, except one case of smallpox at Guantanamo.

Respectfully,

A. B. McDowell,
Acting Asst. Surg., Public Health and Marine-Hospital Service.

The Surgeon-General Public Health and Marine-Hospital Service.

[Inclosures.]

OFFICERS AND EMPLOYEES ON DUTY AT SANTIAGO DE CUBA AND SUBPORTS ON MAY 19, 1902.

Santiago de Cuba.—Alexander B. McDowell, acting assistant surgeon, in command; Richard Wilson, acting assistant surgeon, boarding officer; M. Miyares, acting assistant surgeon, boarding officer; Leonard Schwan, acting clerk; Louis L. Raffo, engineer of steam launch *Branham;* Rafael Reyes, engineer, disinfecting barge *Rough Rider;* Antonio R. Gisbert, captain, disinfecting barge *Rough Rider;* Francisco Serrano, pilot, steam launch *Branham;* Carlos Planchs, carpenter; Jose G. Garcia, watchman, office and shore plant; Vicente Palermo, watchman, disinfecting barge *Rough Rider;* Ramon Serrano, attendant, steam launch *Branham.*

Manzanillo.—R. de Socarras, acting assistant surgeon, in charge of station.

Guantanamo.—H. S. Caminero, acting assistant surgeon, in charge of station.

Daiquiri.—Juan J. de Jongh, acting assistant surgeon, in charge of station.

PORT OF SANTIAGO DE CUBA.

Summary report, September 16, 1901, to May 20, 1902, at noon.

Vessels inspected and passed on arrival	305
Vessels passed without inspection	168
Vessels boarded and passed on medical officer's certificate	8
Vessels quarantined on account of yellow fever aboard	1
Vessels issued bills of health	352
Vessels disinfected	23
Crew of incoming vessels inspected	10,486
Crew of incoming vessels passed without inspection	7,007
Passengers of incoming vessels inspected	5,405
Passengers of incoming vessels passed without inspection	7,974
Crew of outgoing vessels inspected	14,832

Certificates issued:	
Immune	42
Nonimmune	568
Applicants for immune certificates rejected	446
Persons vaccinated	77
Immigrants inspected and passed	1,772
Pieces of baggage disinfected	719
Pieces of baggage inspected and passed	354
Cases of yellow fever removed from vessels	11
Deaths from yellow fever on vessels in port	1
Quarantinable diseases reported in city	0
Deaths in city	630
Certificates issued for shipping remains of dead bodies to the United States	6

Summary report, May 20, 1902, to June 30, 1902.

Vessels inspected and bills of health issued	35
Crew inspected	1,122
Passengers inspected	752
Health certificates issued	173
Immune certificates issued	21
Persons vaccinated	3
Vessels disinfected in accordance with regulations United States Treasury Department	5

PORT OF GUANTANAMO, CUBA.

Summary report, September 16, 1901, to May 20, 1902, at noon.

Vessels inspected and passed on arrival	54
Vessels passed without inspection	112
Vessels issued bills of health	89
Crew of incoming vessels inspected	1,876
Crew of incoming vessels passed without inspection	7,712
Passengers of incoming vessels inspected	1,081
Passengers of incoming vessels passed without inspection	3,402
Crew of outgoing vessels inspected	2,716
Immigrants inspected and passed	34
Smallpox reported in city	1

PORT OF DAIQUIRI, CUBA.

Summary report, September 16, 1901, to May 20, 1902, at noon.

Vessels inspected and passed on arrival	63
Vessels issued bills of health	64
Crew of incoming vessels inspected	1,639
Crew of outgoing vessels inspected	1,669
Immigrants inspected and passed	0
Quarantinable diseases reported	0

PORT OF MANZANILLO, CUBA.

Summary report, September 16, 1901, to May 20, 1902, at noon.

Vessels inspected and passed on arrival	222
Vessels passed without inspection	58
Vessels issued bills of health	276
Crew of incoming vessels inspected	4,917
Crew of incoming vessels passed without inspection	1,314
Passengers of incoming vessels inspected	3,616
Passengers of incoming vessels passed without inspection	1,242
Crew of outgoing vessels inspected	4,053
Immigrants inspected and passed	10
Deaths in city to April 30, inclusive	125
Certificates issued for shipping remains of dead bodies to the United States	5

CIENFUEGOS.

Report of Acting Asst. Surg. R. L. McMahon.

Public Health and Marine-Hospital Service,
Office of Medical Officer in Command,
Cienfuegos, Cuba, August 23, 1902.

Sir: I have the honor to transmit herewith report of the transactions at this station during the period from September 15, 1901, to July 1, 1902.

Method of inspection.—Vessels from foreign and United States ports and those in the coastwise trade beyond the limits of this district fly the yellow flag on entering the harbor; on coming to an anchorage they are boarded and treated in accordance with the United States quarantine regulations. The sanitary condition of the crew, passengers (if any), and vessel is noted. If everything is satisfactory the regular certificate of discharge is given. Government vessels are granted free pratique on the certificate of the medical officer on board. In the event of a vessel arriving with a case of contagious or infectious disease on board, the facts would be telegraphed at once to the chief quarantine officer, asking for instructions, while the vessel would be ordered to an anchorage at the quarantine buoy, and there remain under strict quarantine supervision, flying the yellow flag. As the only marine hospital in Cuba permanently established and meeting all the requirements of modern science is at Mariel, the vessel would probably be ordered to proceed to that place. Vessels arriving from ports where bubonic plague exists are given certificates of discharge after thorough disinfection and killing all rats on board.

Equipment of the station.—One steam launch (*Urquhart*); length, 40 feet; 16-horsepower engine; speed, 9 miles per hour; used in boarding vessels arriving and coming to an anchorage in this bay. One 16-foot Whitehall rowboat, with 2 pairs of oars; used as an auxiliary to the steam launch in making inspections of vessels. A shore disinfecting plant at the end of the Government wharf, a building 36 by 20 feet, allowing small vessels to come alongside to be disinfected; devoted now to the disinfection of baggage of outgoing passengers; equipped with "Geneste-Herecher" steam chamber, 7 feet 10 inches long, 6 feet diameter; 3 "Kinyoun-Francis" autoclaves; 20 sulphur pots; 2 "Challenge" hand pumps, with 300 feet rubber hose.

A disinfecting barge (*Sentinel*), anchored in 30 feet water in bay; equipped with 2 "Kinyoun-Francis" steam chambers; sulphur engine and fan; 100 feet galvanized-iron sulphur pipe (10-foot lengths); 50 feet 6-inch rubber sulphur pipe; steam pump, with 200 feet hose, for the washing down of vessels' holds; bichloride of mercury, sulphur, carbolic acid, and solution of formalin for disinfection purposes.

Also on board barge, conveniently stored between decks, a complete outfit of tents, beds, and bedding, with necessary kitchen utensils, for the accommodation and treatment of sick in detention camp for emergency cases, Punta Ladrillos, a point about 5 miles across the bay, marked by a buoy and provided with a small wharf at which the launch of this station can make landing, being where the emergency cases would be treated.

Officers and employees.—One officer in command, 1 hospital steward and clerk, 2 engineers (1 for launch, 1 for disinfecting machinery), 1 pilot for launch, 1 fireman on launch, 3 sailors (1 on launch, 2 on disinfecting barge), 1 messenger in office.

Certification of passengers.—All persons desiring transportation to the United States on vessels leaving this port must present themselves to the commanding officer and furnish to him satisfactory evidence that they are protected from smallpox and are otherwise healthy. Upon this being determined, he issues to them a health certificate stating these facts.

Disinfection of baggage and vessels.—Baggage: All baggage that requires disinfection is submitted to moist heat of 220° F. or more on board the disinfecting barge or in the shore plant. Vessels: All vessels to be disinfected are attached alongside the disinfecting barge and, if of iron, the cargo compartments are thoroughly washed down with a solution of mercury (1–400). After this the sulphur pipes from the barge are run into the holds, hatches closed, and sulphur gas of a percentage of 5 pounds for each 100 tons capacity of the vessel is forced by means of the sulphur engine and fan on board the barge into the holds of the vessel, hatches remaining closed for twelve hours. The forecastle and water-closets are washed down with bichloride or carbolic acid solution and then sulphured with small sulphur pots. Saloons and officers' cabins are disinfected with formaldehyde or solution of formalin. All bedding and clothing are removed from the vessel to the barge and disinfected in the steam chambers.

The following report of transactions at the port of Casilda has been compiled from weekly reports on file in this office. Doctor Cantero, who was in charge of that substation, died some time since and it is impossible to get a more complete report from there:

Statistics.

Month.	Deaths.	Vessels inspected.	Bills of health.	Contagious diseases.
1901.				
September	7	15	14	0
October	16	36	37	0
November	14	44	44	0
December	24	51	49	0
1902.				
January	18	45	46	0
February	16	44	41	0
March	22	50	49	0
April	16	46	45	0
May	12	41	39	0
June	0	0	0	0
Total	145	372	364	0

The report of transactions at the substation at Santa Cruz del Sur is likewise made from records on file at this office, the officer who was in command there having left.

Statistics.

Month.	Deaths.	Vessels inspected.	Bills of health.	Contagious diseases.
1901.				
September	1	7	4	0
October	2	19	16	0
November	2	21	19	0
December	2	25	25	0
1902.				
January	5	23	23	0
February	1	23	24	0
March	1	24	23	0
April	3	22	25	0
May	3	21	20	0
June	0	0	0	0
Total	20	185	179	0

Month.	Deaths in city.	Vessels inspected.	Crews inspected.	Passengers inspected.	Passengers vaccinated.	Bills of health issued.	Vessels disinfected.	Baggage disinfected.	Baggage inspected.
1901.									
September	25	27	842	325	0	37	5	8	15
October	50	53	1,621	689	0	74	9	0	24
November	60	50	1,628	592	0	79	0	0	0
December	69	65	1,872	746	0	75	0	0	0
1902.									
January	64	50	2,080	551	0	91	0	0	0
February	57	53	1,580	557	0	60	0	0	0
March	64	62	2,090	895	32	101	0	0	24
April	58	52	1,557	1,089	14	97	0	0	3
May	71	45	1,275	690	9	75	5	0	0
June	61	15	426	40	5	22	4	0	0
Total	579	472	14,971	6,174	60	711	23	8	66

One case of yellow fever reported from this office during the time covered by the report occurred during June, 1902; originated on the steamship *Vlieland*, sailing from Vera Cruz,

May 20, 1902, the office property and equipment of the station was turned over to the Cuban Government. Since that time there has been but one United States Public Health and Marine-Hospital Service officer at this station.

Respectfully,

R. L. McMahon,
Acting Asst. Surg., P. H. and M. H. S.

The Surgeon-General Public Health and Marine-Hospital Service.

PORTO RICO.

The quarantine service in Porto Rico has been conducted during the current fiscal year upon the same lines as were followed during the last fiscal year. The disinfecting barge *Defender* is now in commission at the port of San Juan. The disinfecting barge *Argus* is en route to Ponce, P. R., where she will be moored in the harbor and be ready for the disinfection of any vessels requiring such treatment.

SAN JUAN AND SUBPORTS.

REPORT BY P. A. SURG. H. S. MATHEWSON, CHIEF QUARANTINE OFFICER OF PORTO RICO.

OFFICE OF MEDICAL OFFICER IN COMMAND,
PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
San Juan, P. R., July 5, 1902.

SIR: Referring to Bureau letter of May 27, 1902, directing me to forward, for insertion in the annual report of the Supervising Surgeon-General for the fiscal year 1902, a report of the quarantine transactions of this and the six subports of the island, covering the period from September 15, 1901, to June 30, 1902, I have the honor to submit herewith the following:

SAN JUAN.

Equipment.—On the island of Miraflores, situated about 2 miles from the city of San Juan, is located quarters for the acting assistant surgeon, a building fitted up for the detention of passengers, with accommodations for some 100 persons, a lazaretto with a capacity for 2 beds, with 6 large hospital tents to supplement it in case of emergency, a metallic-lined room for the disinfection by formalin, generated in autoclaves, of certain classes of baggage when it is impracticable to employ the plant on the barge, and also necessary bath houses, a storeroom, workshop, etc. Four hundred yards from the island the disinfecting barge *Defender* is moored. This barge is equipped with a complete disinfecting plant, embracing two steam chambers with formalin attachments, a boiler, sulphur furnace with engine and fan, necessary hose, tanks, etc., for the thorough disinfection of vessels. This equipment is in a good state of preservation. The station is also provided with a 40-foot steam cutter, fast, and in good condition; and this boat is used in boarding vessels, and when not in commission, by reason of being docked or tied up for minor repairs, a sailboat or, in the event of there being no wind, a small rowboat, both of which are in serviceable condition, is used for boarding purposes.

Out quarantine.—All vessels arriving at San Juan which require to be inspected are boarded and inspected in the out quarantine anchorage. This anchorage is located about 1 mile from the main water front of the city of San Juan. Vessels from infected or "suspicious" ports are required to anchor here. They are then boarded, the crew and passengers mustered and inspected, the baggage examined, and finally the ship proper is inspected. The inspection of the vessel proper includes the examination of the water tanks, particularly in such vessels as arrive from tropical ports and are hence liable to have mosquitoes on board. Baggage and mail for Porto Rico arriving from such ports is, unless it bears the "Inspected and passed" or the "Disinfected and passed" certificate of a medical officer of the Marine-Hospital Service, removed to the quarantine barge *Defender* and disinfected by either steam or formalin, as the case may require. Passengers on this class of vessels destined for Porto Rico who can not produce satisfactory evidence of immunity to yellow fever are detained in quarantine at the island the necessary observation period, and those passengers who arrive from ports known to be infected with smallpox, unless they can show good evidence of a recent successful "take" following vaccination, or unless they have previously had the disease, are vaccinated before being permitted to land.

If there is no illness on such vessels and no sufficiently reasonable grounds for believing them to have had recent sickness of a quarantinable disease, they are permitted to take passengers and water and discharge freight under guard. This precaution is taken to prevent passengers in transit or any of the crew who may not be immune from having direct communication with the shore. Freight discharged from these vessels is lightered ashore while the ship is lying anchored in the channel. Vessels arriving from clean ports are inspected and allowed to dock, provided, of course, their sanitary histories and the health of the passengers and crew is satisfactory.

Of the vessels arriving at the port of San Juan from infected or "suspicious" ports, there are but few who remain in port for more than twelve to fifteen hours. While here, as stated above, they are quarantined and guards placed upon them. The Herrera Line of steamers, plying between Cuban and Porto Rican ports via ports in Santo Domingo, of which there arrive two steamers monthly, remain here for three days or more to embark cattle and miscellaneous cargo for Cuba. These vessels have heretofore been given free pratique, for the reason that they invariably arrive clean with good sanitary histories and are always disinfected at Santiago de Cuba by officers of the Marine-Hospital Service prior to their clearing for Porto Rico via Dominican ports.

In quarantine.—Those vessels which arrive here with illness of a quarantinable nature on board, or of evidence of having had recent illness of a quarantinable disease, are taken to the "in quarantine" anchorage, situated opposite the quarantine station and about 2 miles from the city, and there disinfected according to the requirements of the quarantine regulations. Passengers and crew are removed to the island and, after the usual bath and change of clothing, placed in the detention barracks, the sick, if any, being isolated in the lazaretto and strict quarantine maintained. Personal effects of such passengers, together with any baggage and mail, are subjected to thorough disinfection as soon after their being received as possible. A medical officer, pharmacist, and all of the attendants quartered at the island are placed in quarantine and direct communication with the city discontinued until the release of all those detained.

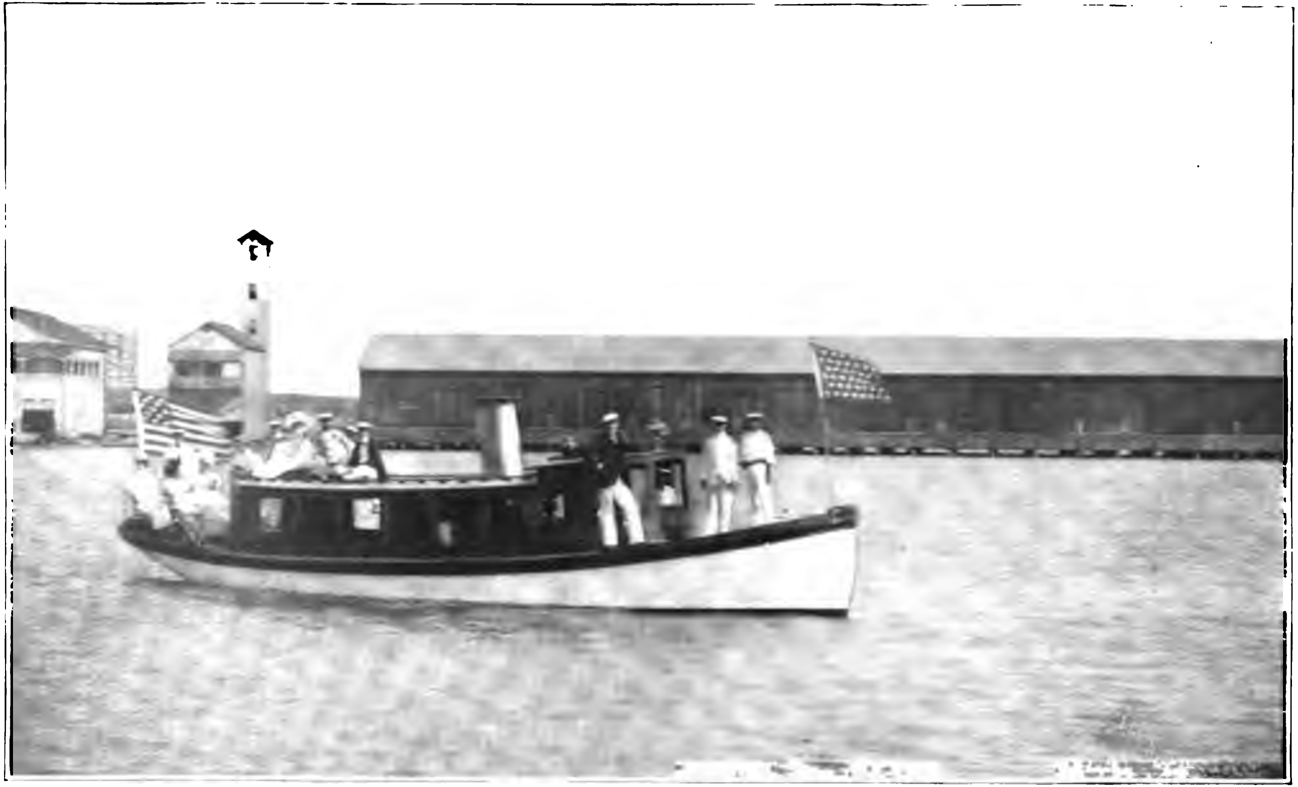
Certifying passengers.—The only certificates issued from this office are certificate of vaccination, and occasionally a certificate is given stating that a person sailing from Porto Rico has not been exposed to yellow fever here, the island being free from that disease.

No outgoing baggage is disinfected, there being no necessity for such a measure here; but all incoming baggage which undergoes disinfection here is labeled with the "Disinfected and passed" stamp.

The following is a list of officers and employees attached to this station on June 30, 1902: Henry S. Mathewson, passed assistant surgeon, chief quarantine officer; Pedro del Valle, acting assistant surgeon, boarding officer; Frank J. Herty, senior pharmacist (duties of a steward); Arthur J. Stevens, acting station engineer, in charge of barge; Serapio Natal, acting launch engineer; Juan Birier, acting coxswain of launch; Damaso Oquendo, acting vice-coxswain of launch; L. Garcia Neander, acting clerk (clerical work in city office); Juan A. Diaz, acting fireman of launch; Laureano Roman, acting station cook; Juan Ramon Vazquez, acting sailor and general help; Epifanio Vazquez, acting sailor and general help; Jose Bombino, acting sailor and general help; Alejandrino Vazquez, acting room man; Juan Rivera, acting yardman and carpenter; Guillermo Geigel, acting messenger in city office; Manuel Barril, acting night watchman at quarantine station.

Subports.—The six subports reporting to this office are Mayaguez, Arecibo, Humacao, Aguadilla, Arroyo, and Fajardo. At each of these stations an acting assistant surgeon is stationed, and vessels requiring to be inspected are, upon entering any of these ports, boarded and inspected. A weekly report of all transactions is rendered this office from each of the subports; and monthly reports, together with mortality statistics, are also transmitted to the chief quarantine officer.

The station of Mayaguez is fitted up with facilities for the disinfection of baggage by means of formalin gas generated with an autoclave into a metallic-lined room. By reason of the small amount of shipping at the other five subports it has heretofore been deemed unnecessary to make any provision for the disinfection of vessels or passengers' effects. In the event of the arrival of a vessel at any of the subports which was infected or considered so, and which required disinfection, she would be remanded to San Juan for that purpose. The boarding of vessels at all of the subports except Humacao is done in boats operated by the customs service. At the port of Humacao a small rowboat owned by this Service is used for boarding purposes. Under the heading "Statistics" will be found a résumé of the work of the several subports during the period covered by this report.



BOARDING LAUNCH "LONG," SAN JUAN QUARANTINE STATION.

Statistics.—The following is a résumé of the quarantine work proper done at San Juan and the six subports during the period covered by this report:

San Juan:	
Vessels inspected	209
Bills of health issued	299
Crew inspected	17,930
Passengers inspected, local	2,269
Passengers inspected, in transit	6,497
Vessels held in quarantine	26
Pieces of baggage disinfected	636
Sacks of mail disinfected	46
Persons vaccinated	123
Persons detained at quarantine station	7
Vessel disinfected	1
Case of contagious disease treated	1
Subports:	
Vessels inspected	220
Bills of health issued	260
Crew inspected	7,121
Passengers inspected (in total)	2,449
Vessels held in quarantine	34
Pieces of baggage disinfected	594
Sacks of mail disinfected	23
Persons vaccinated	52
Vessels disinfected	0

The number of vessels inspected at each of the subports during the period embraced by this report are:

Mayaguez	94
Arecibo	33
Humacao	41
Aguadilla	25
Fajardo	13
Arroyo	14

The only subport at which baggage and mail is disinfected is Mayaguez. The number of pieces of baggage and the number of sacks of mail disinfected at this port during the time covered by this report was 594 and 23, respectively.

At the city office in San Juan the clerical work of San Juan quarantine station and also the Marine-Hospital Service business is transacted, as well as the preparation of reports, etc., from the subports and the general administrative work of the quarantine work on the island. The office is at present located at No. 3 San Justo street.

There occurred but one case of yellow fever on incoming vessels. This case of yellow fever was reported to this office by the acting assistant surgeon on duty at the port of Arecibo as being in the person of a passenger on board of the German steamship *Canadia*, arriving at that port upon the 22d of February, 1902. The vessel came from Carupano, Venezuela, and the infection was evidently gotten there. The steamer immediately after inspection left for St. Thomas, Danish West Indies, without holding communication with the shore.

There occurred no cases of yellow fever during the nine months embraced in this report, and, indeed, the island has been free from that disease during the past three or four years.

During the month of February, 1902, a mild type of smallpox made its appearance in the city of San Juan, and about this time a suspicious eruptive disease also appeared in the towns of Ponce and Utuado. Subsequently this disease spread to other towns, infecting as many as fifteen or twenty other localities. It is rather difficult to obtain definite statistics concerning this outbreak, but it is a clearly established fact that the form in which the disease made its appearance was an exceptionally mild one, and that few, if any, deaths occurred as a direct result of smallpox or varioloid infection. The outbreak here mentioned was undoubtedly a recrudescence arising from foci of infection of the epidemic reported last year. A detailed report upon this outbreak will be made as soon as I am in possession of the statistics relative thereto. These statistics I hope to be able to secure at an early date from the superior board of health here.

Efforts have been continued to exterminate mosquitoes at the quarantine station by means of filling in or draining the pools and by the liberal use of crude kerosene oil in those places where it was not practicable to fill in or drain off. These efforts have been only partially successful, owing to the large area requiring treatment and to the excessive rainfall, which has been unusually heavy during the past three months. Undoubtedly many mosquitoes have been destroyed, and by the continuance of the methods now being employed it is thought that these pests may almost entirely be gotten rid of at the station.

Respectfully,

H. S. Mathewson,
P. A. Surg., P. H. and M. H. S., Chief Quarantine Officer for Porto Rico.

Surgeon-General Public Health and Marine-Hospital Service.

PONCE.

Report from Ponce, by Asst. Surg. W. W. King.

Public Health and Marine-Hospital Service,
Office of Medical Officer in Command,
Ponce, P. R., October 20, 1902.

Sir: In accordance with Bureau letter of October 2, 1902, I have the honor to forward the following report of the quarantine transactions at this station for the fiscal year ended June 30, 1902:

Vessels inspected	195
Vessels in quarantine	45
Vessels disinfected	6
Crew inspected	8,150
Passengers for Ponce inspected	1,618
Passengers in transit inspected	4,336
Pieces of baggage inspected	1,075
Pieces of baggage disinfected	875
Sacks of mail disinfected	35
Bills of health issued	28

During the year no vessel arrived with quarantinable disease on board. Vessels from suspicious ports of Cuba, Haiti, Dominican Republic, and Central and South America have been held in quarantine, but were not disinfected, as they remained in port only a few hours, transacting business under guard, and only such communication with the shore as was necessary, and not considered dangerous. Nonimmune passengers from suspicious or infected ports were remanded to San Juan for detention, there being no facilities for it here. Baggage and mail from these ports were disinfected by formaldehyde. Nearly all baggage from Cuban ports was disinfected at port of departure and passed here.

No material change has been made in the station equipment nor in the methods of operation. Bills of health were issued to all vessels sailing for American ports, and to other ports when application was made for them. Weekly sanitary reports were made of the sanitary condition, mortality, etc., of this district, including reports on the smallpox epidemic which occurred during the year.

Respectfully,

W. W. King,
Asst. Surg., P. H. and M. H. S.

San Juan, P. R., *October 21, 1902.*

Respectfully forwarded.

H. S. Mathewson,
P. A. Surg., P. H. and M. H. S., Chief Quarantine Officer for Porto Rico.

Mexico.

An officer has been on duty at the port of Vera Cruz during the entire fiscal year and another officer has recently been assigned to the port of Tampico for the purpose of enforcing the quarantine law of 1893.

VERA CRUZ.

REPORT OF TRANSACTIONS AT VERA CRUZ, MEXICO, BY ACTING ASST. SURG. S. H. HODGSON.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
OFFICE OF MEDICAL OFFICER IN COMMAND,
Vera Cruz, Mexico, October 11, 1902.

SIR: * * * During the year an epidemic of yellow fever has been prevalent, which rendered the work of inspection of passengers and crews more critical. * * *

During the year 270 bills of health were issued to vessels sailing for United States ports. These vessels carried crews to the number of 14,085 and passengers to the number of 7,911. * * *

One case of yellow fever developed aboard of an American vessel while in port. The vessel sailed with the convalescent aboard for Mobile, and was sent from there to Ship Island for quarantine and detention. No other case developed aboard of the vessel.

The sanitary condition of the port during the year has been bad. Two hundred and twenty-two deaths were reported from yellow fever, 19 from smallpox, 236 from tuberculosis, 162 from malaria, and 1,816 from all causes. * * *

Respectfully, yours,

S. H. HODGSON,
Acting Asst. Surg., P. H. and M. H. S.

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

TAMPICO.

REPORT OF TRANSACTIONS AT TAMPICO, MEXICO, BY ASST. SURG. JOSEPH GOLDBERGER.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
OFFICE OF MEDICAL OFFICER IN COMMAND,
Tampico, Mexico, July 1, 1902.

SIR: I have the honor to report herewith the transactions of the Service at this port from May 21, 1902, to June 30, 1902, both inclusive.

Immediately on my arrival I called at the consulate and met Mr. Pressley, the vice-consul, who was acting, in the absence on leave, of Consul Magill. Through his courtesy I was able, without delay, to meet the various steamship agents. These I advised of my intention to inspect all vessels clearing for the United States, and requested that they notify me in each case of the expected hour of sailing.

There were thus inspected, from May 21, 1902, to June 30, 1902, 40 vessels, 1,295 officers and crew, and 33 passengers. In addition, 2 vessels were disinfected at the request of their agents, and a certificate, setting forth the extent and method of the treatment, issued to each. In order to detain these latter vessels as little as possible consistent with the regulations, the disinfection of the holds with sulphur dioxid (by the pot method) was begun immediately after loading was completed, the hatches being battened down and covered with tarpaulins just as the vessel was ready to proceed to sea. The holds were to be opened in the presence of the quarantine officer at the port of destination, who was to be requested to certify to that effect.

The above number of vessels inspected includes 7 cleared for Cuban ports. In view of the fact that United States consular officers were requested to use their good offices in behalf of Cuba and Cuban citizens until the appointment of Cuban representatives, the inspection of vessels clearing for ports in that island was begun June 14, 1902, and the bills of health issued were signed in conjunction with the consul as in the case of vessels clearing for the United States. This action was reported to and was approved by the Bureau.

Three certificates were issued to travelers to the United States by rail. These certificates were given only on request, and set forth simply the sanitary condition of this port and the health of the applicant. A short personal description was appended in each instance.

The personnel of this station consists only of the medical officer in command. The disinfecting plant consists of 2 Kuhn formaldehyde generators and 1 Kinyoun-Francis autoclave.

Immediately after assuming my duties at this station I communicated with the medical officers of the Marine-Hospital Service on the Texas-Mexican border, advising them of my presence here, of the sanitary condition of the port, and of my readiness to cooperate with them in any way that they might suggest.

Respectfully,

JOS. GOLDBERGER,
Asst. Surg., P. H. and M. H. S.

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

CENTRAL AND SOUTH AMERICA.

FRUIT-PORT INSPECTION SERVICE.

In accordance with the custom of previous years, the work of inspection at the fruit ports of Central and South America was discontinued at the close of the active quarantine season of 1901 and the officers recalled.

Reports of transactions at these stations from September 15 to November 1, 1901, will be found in public health reports for November 22, 29, and December 6, 1901.

At the beginning of the present quarantine season the following officers were again assigned to the various fruit ports for the purpose of inspecting the vessels, their cargoes and crews, bound from said ports to ports of the United States, the instructions issued to these officers being the same as those in force last season: Paul Osterhout, Bocas del Toro, Colombia; W. H. Carson, Port Limon, Costa Rica; A. J. Smith, Livingston, Guatemala; S. H. Backus, Puerto Cortez, Honduras; D. W. Goodman, Bluefields, Nicaragua; W. B. Robertson, La Ceiba, Honduras; R. H. Peters, Belize, British Honduras.

On April 1, 1902, the following circular was issued, reducing the period of detention under observation of prospective passengers from ten to five days.

[Department circular No. 34, 1902.]

AMENDMENT TO DEPARTMENT CIRCULAR NO. 134, DATED AUGUST 31, 1900, RELATING TO FRUIT VESSELS PLYING BETWEEN INFECTED OR SUSPECTED FRUIT PORTS AND PORTS OF THE UNITED STATES.

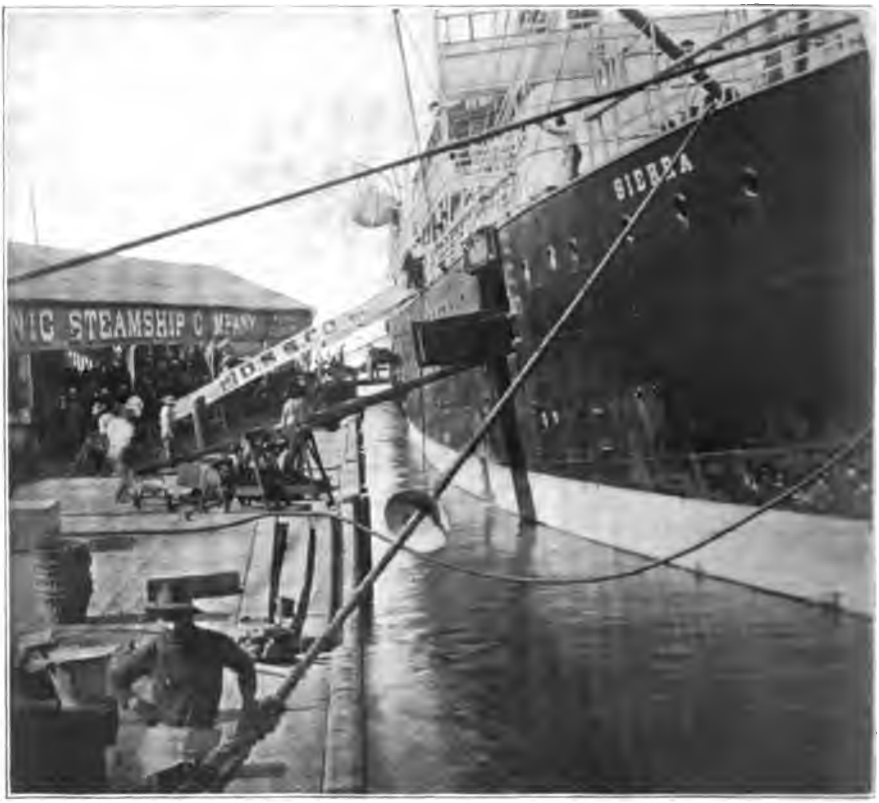
TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL MARINE-HOSPITAL SERVICE,
Washington, D. C., April 1, 1902.

To United States consular officers, masters and owners of vessels, collectors of customs, national, state, and local quarantine officers, and others:

In view of the fact that five days' detention is considered sufficient in the case of passengers on fruit vessels leaving uninfected fruit ports of Central and South America for ports of the United States, paragraph 7 of Department circular No. 134, dated August 31, 1900, entitled "Special regulations for the government of vessels plying between infected or suspected fruit ports and ports of the United States," is hereby amended by substituting the word "five" for the word "ten" wherever the latter occurs in said paragraph.

WALTER WYMAN,
Surgeon-General M. H. S.

Approved:
L. M. SHAW,
Secretary of the Treasury.



ISOLATION OF STEAMER FROM RAT-PROOF WHARF, HONOLULU QUARANTINE STATION.

PUERTO CORTEZ.

REPORT OF TRANSACTIONS AT PUERTO CORTEZ, HONDURAS, BY ACTING ASST. SURG. W. H. CARSON.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
OFFICE OF MEDICAL OFFICER IN COMMAND,
Puerto Cortez, Honduras, July 3, 1902.

SIR: I have the honor, in answer to your letter of May 28, 1902, requesting me to make a report of the transactions at my station from the time of my arrival to and including June 30, 1902, to make the following report:

Work was begun May 1, 1902. We have an air-tight disinfecting chamber, autoclaves; formalin solution, 1 carboy. This is for baggage; we do not fumigate the ships which come alongside wharf.

Number of passengers inspected, 77; passengers vaccinated, none; vessels inspected, 22; vessels disinfected, none; pieces of baggage inspected, none; pieces of baggage disinfected, 120.

Respectfully,

SAMUEL H. BACKUS,
Acting Asst. Surg., P. H. and M. H. S.

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

PORT LIMON.

REPORT OF TRANSACTIONS AT PORT LIMON, COSTA RICA.

OFFICE OF MEDICAL OFFICER IN COMMAND,
PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
Port Limon, Costa Rica, July 1, 1902.

SIR: I have the honor, complying with instructions of Bureau letter dated Washington, D. C., May 28, 1902, to herewith submit my report of the transactions at this station from the time of my arrival here, April 17 last, to and including June 30, 1902.

The equipment at this station consists of 1 autoclave complete, 1 carboy (gr. 60,000) of formaldehyde, and 12 clinical thermometers. There are no employees at this station, all the labor necessary for handling passengers' baggage as well as the laboring fruit crews' clothing for disinfection, being provided by the United Fruit Company's agent here.

The fruit company's agent here preferring that all disinfection should be by steam (Kinyoun-Francis), thus dispensing with the formaldehyde-vapor process, and acting under instructions of Bureau letter dated April 14, 1902, it was accepted.

The Kinyoun-Francis disinfector in use here is suitably located on the extreme end of the pier, 1,100 feet from the shore line.

All fruit steamers unload and receive their return cargo of fruit at this pier, and just prior to their departure an inspection of their crews is made by me.

This port being already infected with yellow fever, since March last but one passenger from here for any southern ports has been permitted to embark during the present quarantine season. This exception was the returning to New Orleans of the Costa Rican consul on May 8 last, by the steamer *Olympia*, by special permission of the Louisiana State board of health.

I have also to inform you that all fruit steamers plying between this port and New Orleans, La., and Mobile, Ala., have a marine medical inspector aboard, representing their respective boards of health. They assist materially in preventing indiscriminate communication between the fruit steamers and the shore.

I have up to date reported 16 cases of yellow fever, the majority of which were of a very mild type of the disease, many of these cases being convalescent, or nearly so, when admitted to the United Fruit Company's hospital here; of which Doctor Steggall is the house physician. Eight of these cases developed here in this port and the other 8 cases were brought here from interior points on the Costa Rica Railway, 38 to 58 miles from here.

One death ascribed to yellow fever occurred here in port the day before my arrival, and which I cabled the Bureau, as well as the health and executive officer of the quarantine board of Mobile Bay, Alabama, the day following, April 17 last.

The following statistics are herewith submitted:

Vessels inspected	5[illegible]
Crew inspected	1,74[illegible]
Passengers inspected (H. and A. Line, New York)	1[illegible]
Passengers in transit (H. and A. Line, New York)	1[illegible]
Passenger inspected (New Orleans, La.)	1
Pieces of baggage inspected	2
Pieces of baggage disinfected (supervised)	2

Respectfully,

WM. H. CARSON,
Acting Asst. Surg., P. H. and M. H. S.

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

BOCAS DEL TORO.

REPORT OF TRANSACTIONS AT BOCAS DEL TORO, COLOMBIA, BY ACTING ASST. SURG. PAUL OSTERHOUT.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
OFFICE OF MEDICAL OFFICER IN COMMAND,
Bocas del Toro, Colombia, July 3, 1902.

SIR: I have the honor to submit the following report of the transactions, methods employed, and the equipment in use at this port from the beginning of the Service for the season of 1902 to and including June 30, 1902.

The Service was inaugurated at this place on April 15, 1902.

Equipment.—This consists of 1 Kuhn formaldehyde generator, No. 1, the property of the Service. The house used as a disinfecting chamber is the property of the United Fruit Company, and is divided into two rooms, one for storing the articles constituting the equipment, the other for hanging the material to be fumigated. The latter room has a little less than 1,000 cubic feet capacity. The fruit companies also furnish an extra room for laborers to change their clothing.

Means of boarding vessels.—Boats for this purpose are furnished by the fruit companies.

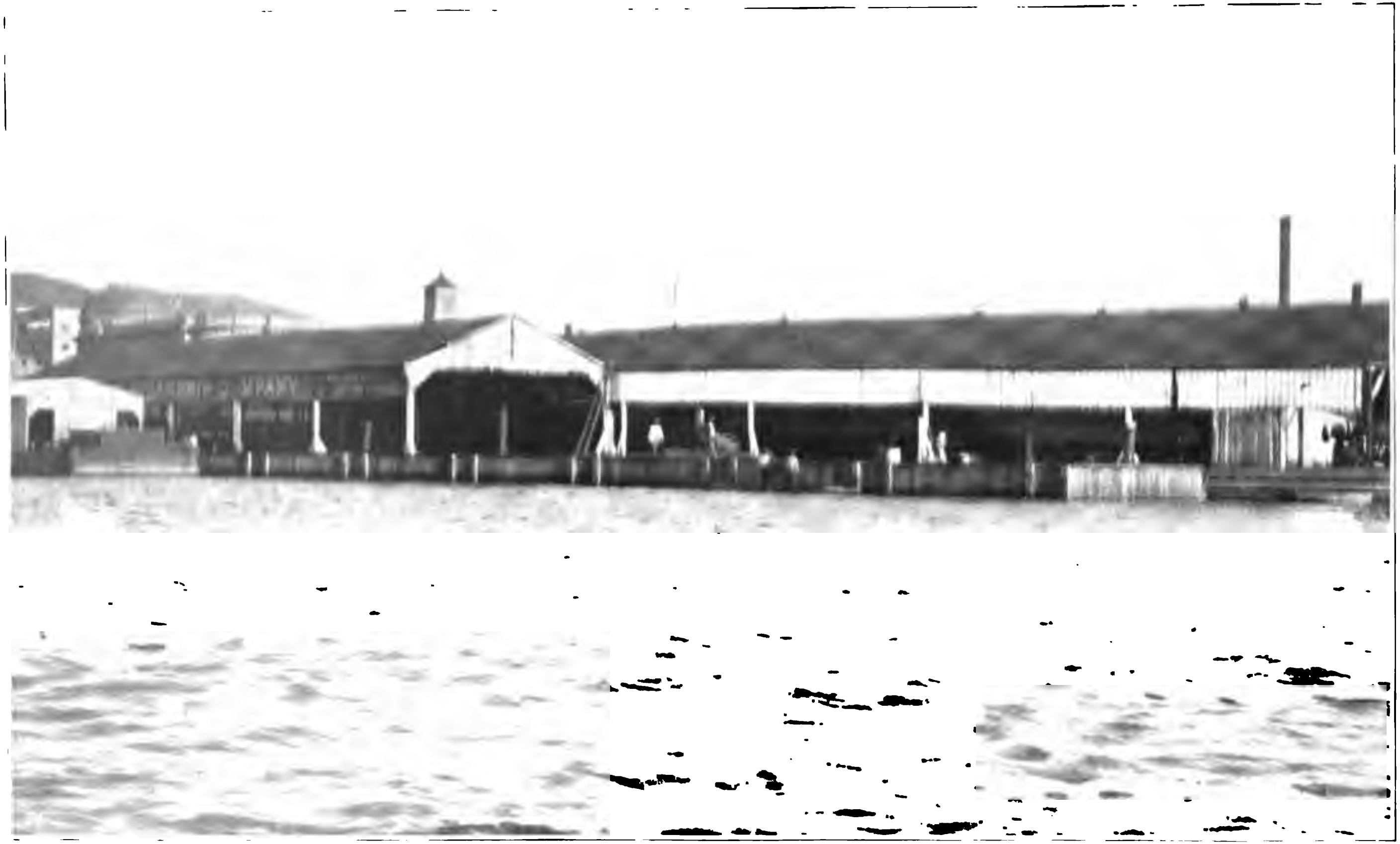
Number of employees.—One, the acting assistant surgeon.

Inspecting and certifying passengers.—Passengers are required to send to the fumigating plant one suit of clothes to be worn when going on board of the steamer; this suit is fumigated and returned to them when they are ready to embark. All other wearing apparel is disinfected (including the containers) and packed and stored in the fumigating house until time to be taken on board, under the direction of the officer of the Service, thus avoiding reinfection. Certificates are issued to passengers at the time of sailing of steamer.

Disinfection of vessels.—This has not been necessary since the Service has been instituted this season. There were no vaccinations.

Vessels inspected	33
Vessels disinfected	0
Pieces of baggage inspected	2
Pieces of baggage disinfected	2
Persons inspected:	
Ships' crews	659
Passengers	2
Total	661

Laborers and their effects.—The different companies furnish suits of overalls, of uniform color and material, to be worn by the men employed to stow the cargo. These are washed after each trip, and when dry are brought to the disinfecting chamber and given twelve hours' exposure to formaldehyde gas. This is generally done in the afternoon, and the next morning the clothing is removed to the dressing room, assorted, and hung up by number. The laborers gather at this dressing room and remove their outer garments, put on the fumigated suits, enter a barge, and are towed to the vessel. I personally attend to all the fumigation of the laborers' clothing, as well as that of the agents of the companies and the pilots.



METHOD OF CLOSING IN WHARVES, HONOLULU QUARANTINE STATION.

Boarding of vessels.—All vessels are boarded by me on their arrival here prior to their departure to Chiriqui Lagoon to load fruit. It requires from twenty-four to thirty hours to stow the fruit, after which they return to this point and are again boarded by me before sailing. The consular bill of health is then signed. A certificate is issued conjointly with the bill of health.

During the time that the vessels are in Chiriqui Lagoon they are entirely from under my observation. However, all steamers engaged in the fruit trade go either to Mobile or New Orleans and have a physician on board as a representative of one or the other health boards.

Respectfully,

PAUL OSTERHOUT,
Acting Asst. Surg., P. H. and M. H. S.

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

CEIBA.

REPORT OF TRANSACTIONS AT CEIBA, HONDURAS, BY ACTING ASST. SURG. W. B. ROBERTSON.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
OFFICE OF MEDICAL OFFICER IN COMMAND,
La Ceiba, Honduras, July 1, 1902.

SIR: I have the honor to submit the following report of the conditions and transactions of this station from the date of opening till the 30th of June, inclusive:

This station was opened on April 21, 1902, and active quarantine commenced on May 1, 1902.

The equipment of this station consists of desk room in the office of the United States consular agency; box desk and table, with the usual appurtenances; supply of official stationery; supply of blank forms for certificates for vessels leaving fruit ports (Form No. 149); personal certificate for passengers leaving fruit ports (Form No. 148); weekly report of conditions and transactions at fruit ports (Form No. 150); disinfecting plant, consisting of a Kuhn formaldehyde generator, replacing the autoclave formerly in use; lead seals and press for sealing purposes.

In accordance with the regulations of the State boards of health under which the trade is carried on, the fruit companies are required to furnish the materials and appurtenances necessary for disinfection; hence there are at present but few calls upon the resources of this Service.

The boarding of vessels is done by boats furnished by the agents or master of the vessel for which the inspection is made.

The staff consists of an acting assistant surgeon only. Any labor required in boarding vessels or in disinfecting is provided by the fruit companies.

The duties of the acting assistant surgeon consist in a general supervision over the shipping entering the harbor; keeping a check upon the working of the ships; inspecting crews and passengers and issuing certificates for same; inspecting and disinfecting baggage, clothing, etc.; investigating the health conditions of the port and vicinity and furnishing weekly reports thereon, and indorsing same on the bills of health.

Methods of inspecting and certifying passengers.—At present no passengers are being carried from this port; all passenger traffic goes via Puerto Cortes.

Method of disinfecting baggage.—Not required up to the present owing to the absence of passengers. Should such become necessary, formaldehyde gas made by the Kuhn generator would be used.

Number of passengers inspected, 1 (for Puerto Cortes), none vaccinated; vessels inspected, 27, none disinfected; no baggage inspected or disinfected.

The health conditions of this port and vicinity are good from a quarantine standpoint. A long stretch of open sea in front and high mountains in the rear at a distance of about 5 miles give an almost daily alternation of sea and land breezes, rendering the air remarkably pure and fresh. Meat, in small pieces, can be readily dried in the sun without putrefying. This is a common custom with the natives.

The estimated population of this place is about 4,000. From April 21 to June 30 there were 21 deaths recorded. Of these 50 per cent were under 2 years of age; 10 per cent between ages of 2 and 12; 10 per cent between 12 and 20 years, and 30 per cent adults. But a large proportion of these were more the result of ignorance and neglect than natural unhealthiness of climate.

Malaria is the prevailing disease, generally manifesting itself in the milder forms of intermittents or short remittents, occcasionally assuming the bilious remittent type, and in some cases being complicated by dysentery. This latter form often carries off children under 2 years of age.

The "ascaris lumbricoides" is very prevalent in the young children of these parts, often attaining a very large size.

The general health of foreigners leading a reasonably hygienic life seems to be very good.

Respectfully, yours,
W. B. Robertson,
Acting Asst. Surg., P. H. and M. H. S.

The Surgeon-General Public Health and Marine-Hospital Service.

BLUEFIELDS.

Report of Transactions at Bluefields, Nicaragua, by Acting Asst. Surg. D. W. Goodman.

Public Health and Marine-Hospital Service,
Office of Medical Officer in Command,
Bluefields, Nicaragua, July 1, 1902.

Sir: I have the honor to submit the following report of the transactions at this station from the day of my arrival thereat, April 19, 1902, to and including June 30, 1902:

In the care of the United States consular agent here I found one formaldehyde autoclave, the property of the Marine-Hospital Service, and which, in connection with an air-tight room, would have been used for the disinfection of clothing of passengers and laborers on the fruit ships plying between this port and ports of the United States south of the southern boundary line of Maryland, had I not found in place and in good working order a Kinyoun-Francis steam disinfector. This is the property of the fruit company, but is operated under the supervision of the Marine-Hospital medical inspector. By means of this machine all wearing apparel, except articles made of or containing leather, celluloid, rubber, etc., which would be ruined by the process, and which, with the containers, are disinfected with formaldehyde, is subjected to a steam bath, at a temperature of 230° F., for one hour, and then dried by the vacuum attachment of the disinfector.

A fireman and competent engineer are employed by the fruit company and placed under the control of the medical inspector. There are no officers except the acting assistant surgeon in charge and no employees connected with this station. Clothing taken from the disinfector is replaced in the trunks, valises, etc., and a seal put on each of them, to be broken only when the baggage is aboard the ship and she away from land.

All fruit vessels are boarded by the Marine-Hospital medical inspector just prior to their departure from port; the ship is inspected and all persons aboard carefully examined. Certificates to this effect and also giving the number of crew, number of passengers, if any, nature of cargo, and the sanitary condition of crew, passengers, cargo, ship, and of the port and surrounding territory are attached to the original and duplicate consular bills of health, and a triplicate sent by mail to the Surgeon-General Marine-Hospital Service. Each passenger is supplied with a personal certificate of identification, the duplicate of which is also sent to the Surgeon-General Marine-Hospital Service.

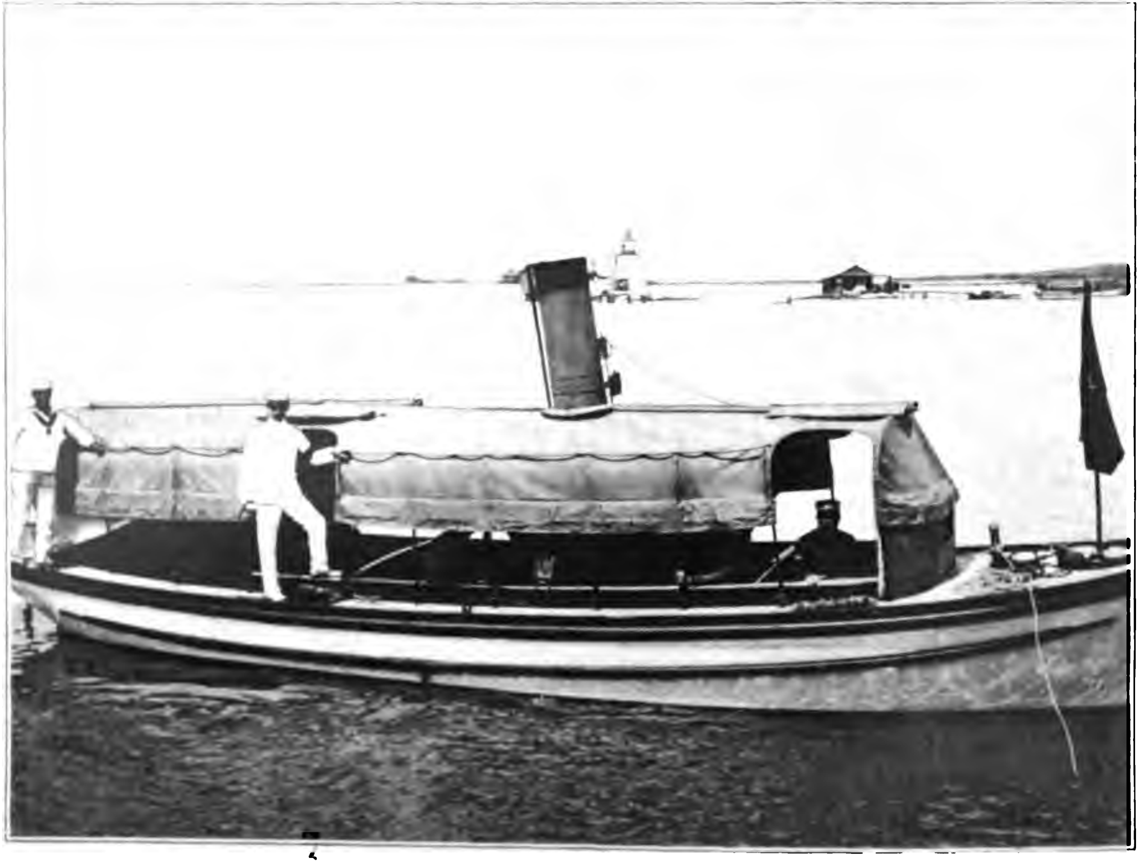
All passengers from this port on fruit vessels are required to be under the supervision of the medical inspector for at least five days prior to their embarking.

Twenty-three ships have been examined, 42 passengers inspected, and 62 pieces of baggage disinfected. The clothing of laborers who go aboard the ships to receive and store the fruit, about 30 to each ship, has also been disinfected.

There having been no suspicion of smallpox at or near this port, no vaccination has been done.

The healthfulness of Bluefields is remarkable, due not to any sanitary or hygienic precautions or practices of its inhabitants, but to its fortunate location on the sloping shore of a bay which receives and bears away on its tides the refuse of the town washed down by the heavy and frequent rains.

For the trimester ended June 30, the records show 16 deaths, 3 children, and 13 adults. Of the latter 4 died of tuberculosis, 2 of old age, 2 of malarial fever, and 5 of various causes. This in an estimated population of 4,000, gives the rate per 1,000 per annum of 16.



STEAM CUTTER "OAHU," HONOLULU QUARANTINE STATION.

Very little communication is had with the suspected ports below, viz, Limon, Bocas, and Colon, and then by small and slow sailing craft; these are inspected, as are all incoming vessels, on arrival by the native port surgeon, and proper precautions are taken that they do not bring in quarantinable diseases.

The acting assistant surgeon United States Marine-Hospital Service at this station sends to the Surgeon-General weekly reports of the transactions and conditions here, copy of the blank forms of which and of other forms used are inclosed herewith.

Respectfully,

D. W. GOODMAN,
Acting Asst. Surg., P. H. and M. H. S.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

BELIZE.

REPORT OF TRANSACTIONS AT BELIZE, BRITISH HONDURAS, BY ACTING ASST. SURG. R. H. PETERS.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
OFFICE MEDICAL OFFICER IN COMMAND,
Belize, British Honduras, July 8, 1902.

SIR: In compliance with Bureau letter, May 28, 1902, I have the honor to submit report of the transactions at this station from April 14 up to and including June 30, 1902.

The station was opened April 14, but in accordance with instructions in letter of April 4, 1902, the regulations regarding the detention of passengers and fumigation of baggage were not enforced until May 1, from which date the active quarantine season dates. The equipment of the station consists of 1 autoclave in fair condition.

The steamships on this coast anchor about 1 mile from shore, as there are no docks, and all freight and passengers have to be carried by lighters to and from the ship, so that there is very little communication between the vessels and shore. By courtesy of the fruit companies I am allowed the use of their boats for the purpose of boarding vessels.

Passengers applying for permits to go to the United States are required to be at least five days from any port the health of which is unknown. All baggage is fumigated by either steam or formaldehyde. As the regulations of the Louisiana board of health call for steam, I have accepted the baggage when thus treated, only baggage for the Mobile steamship being subjected to formaldehyde.

Since the opening of the station, April 14, 1902, 23 vessels have been inspected and given certificates, 618 crews inspected, 93 passengers given certificates, and 109 pieces of baggage disinfected. Of the 23 vessels cleared from this port, 17 were for New Orleans, La., 5 for Mobile, Ala., and 1 for Pensacola, Fla.

Respectfully,

R. H. PETERS,
Acting Asst. Surg., P. H. and M. H. S.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

HAWAII.

HONOLULU QUARANTINE.

During the past year the question was raised as to the title to the quarantine station at Honolulu, which prevented making contemplated repairs and improvements at said station. This matter is now, however, in a fair way of settlement, and it is anticipated that in the near future necessary building, grading, etc., will be carried out.

HONOLULU AND SUBPORTS.

REPORT OF TRANSACTIONS AT HONOLULU AND SUBPORTS, BY P. A. SURG. L. E. COFER.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
OFFICE OF MEDICAL OFFICER IN COMMAND,
Honolulu, Hawaii, July 12, 1902.

SIR: In compliance with Bureau letter (foreign quarantine division) of May 27, 1902, I have the honor to make the following report of the transactions at this station from September 15, 1901, to and including June 30, 1902:

OFFICERS AND MEN ON DUTY IN THE HAWAIIAN ISLANDS.

P. A. Surg. L. E. Cofer, chief quarantine officer for Hawaii.

Port of Honolulu.—P. A. Surg. L. E. Cofer (in command); Asst. Surg. F. J. Thornbury; Asst. Surg. John M. Holt; Asst. Surg. Robert L. Wilson; Acting Asst. Surg. A. N. Sinclair; Pharmacist Frank L. Gibson; Emma F. Smith, inspectress; Frank Dalton, pilot of steam launch *Oahu;* Bruno Henning, engineer of steam launch *Oahu;* Samuel Floyd, fireman of steam launch *Oahu;* Henery Gerald, deck hand on steam launch *Oahu;* James K. Wright, engineer at quarantine station; Samuel Pinao, engineer at channel wharf; Kaaeia Mahina, attendant on disinfecting scow; Raphael Kahaulilani, attendant on disinfecting scow; P. Moldenhaner, carpenter; Charlie Kekuwewa, boatman; Ah Kui, cook; Leong Lim, cook's helper; A. Smith, attendant and fireman at quarantine station; Charles Campbell, general caretaker and cleaner; F. Seijiro, yardman and caretaker; Anthony Walthan, caretaker and general utility; H. Tsuyo, laundress; Philip Naone, helper in special quarantine work; Philip Kaauwai, messenger in office.

Port of Hilo, Hawaii.—Acting Asst. Surg. John G. Grace.

Port of Kahului, Maui.—Acting Asst. Surg. John Weddick.

Port of Kihei, Maui.—Acting Asst. Surg. R. H. Dinegar.

Port of Lahaina, Maui.—Acting Asst. Surg. William Peters.

Port of Koloa, Kauai.—Acting Asst. Surg. E. S. Goodhue.

Port of Mahukona, Hawaii.—(An acting assistant surgeon recommended.)

For convenience of administration, the station is divided as follows: (1) Division of the quarantine station proper, (2) division of the channel wharf, (3) division of incoming quarantine, (4) division of outgoing quarantine, (5) division of marine-hospital relief, (6) division of immigration inspection, and (7) division of correspondence and accounts.

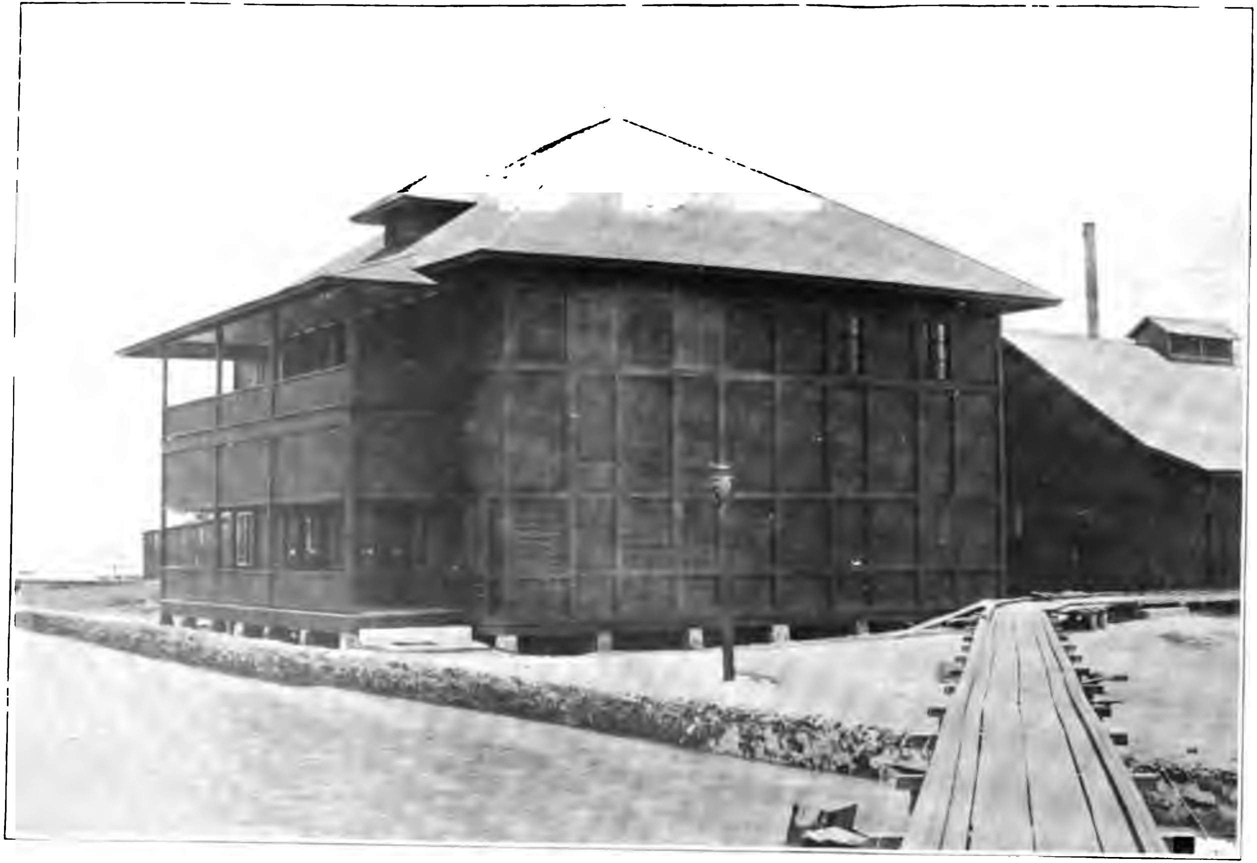
DIVISION OF THE QUARANTINE STATION PROPER.

Persons detained under observation	11,073
Persons bathed	11,073
Persons vaccinated	1,560
Persons sick with quarantinable disease	1
Persons sick with nonquarantinable disease	8
Pieces of baggage disinfected	11,883
Bodies cremated	37

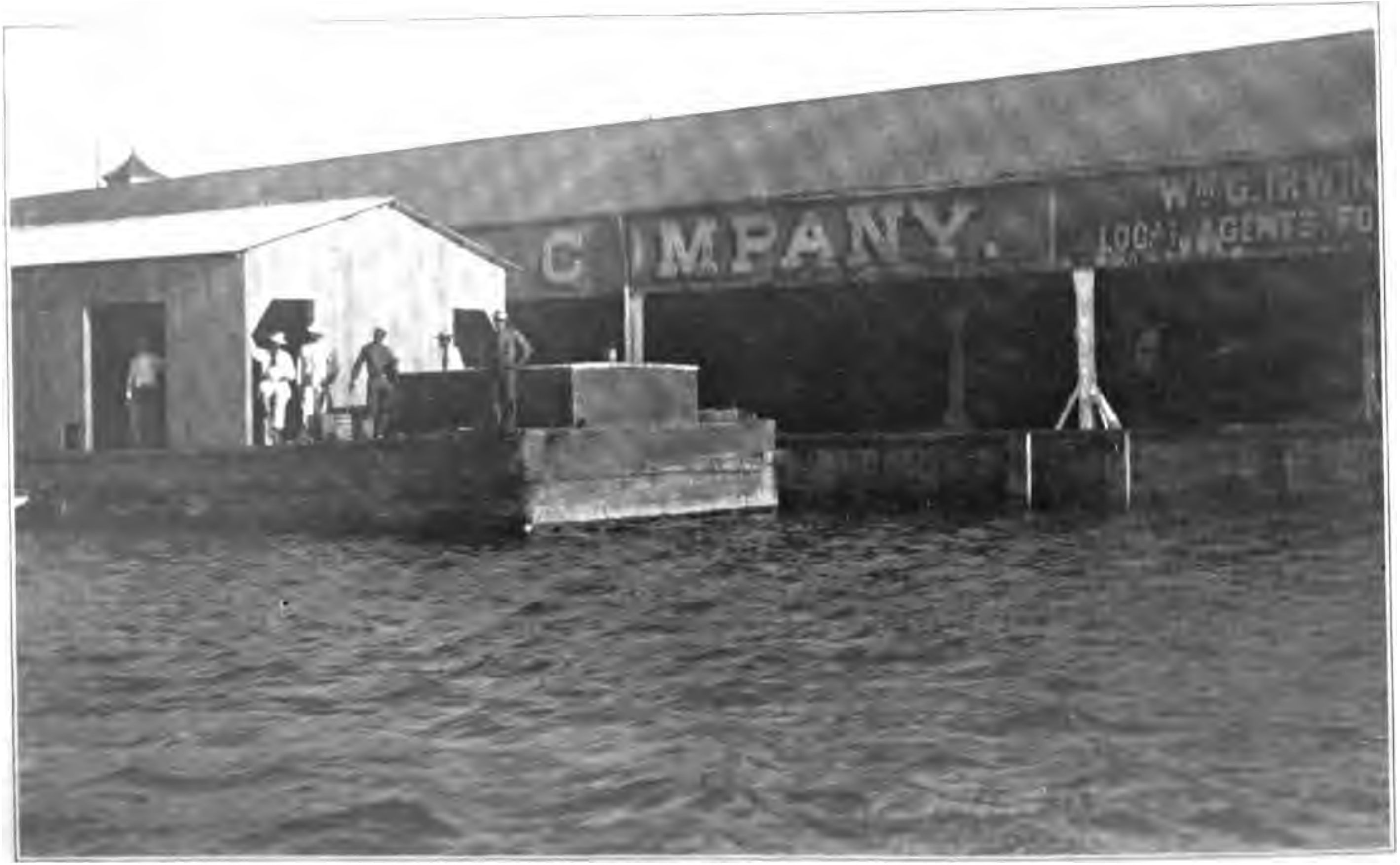
As a result of your liberal support in the matter of improving the quarantine station at this port, together with the constant work which has been done by the station force during the past nine months, the conditions here are so much improved that there are very few quarantine stations in the service to-day better appointed or better adapted to our use. The task was a very hard and discouraging one, but order has so taken the place of chaos that one can now see in the future of Quarantine Island a model quarantine station, as well as a very attractive spot.

The improvements made since my last report are as follows:

(1) A new executive building containing (*a*) quarters for 2 single officers, consisting of suitably furnished bed and sitting rooms with bathroom complete; (*b*) a bacteriological outfit; (*c*) a well-stocked dispensary; (*d*) an executive office suitably appointed; (*e*) a surgeon's office. (2) A new bath house with cement floors, containing five showers and two enameled bath tubs. (3) A new 14-bed hospital, completely furnished in white enameled iron, and in other ways perfectly appointed. (4) A cook house for the hospital (not equipped at this writing). (5) A new building for cabin passengers, accommodating 48 persons. This building is now completely appointed and furnished. (6) Four barracks buildings capable of accommodating 300 persons. (7) A camp cook house which was built by the station force out of the



EXECUTIVE BUILDING. HONOLULU QUARANTINE STATION.



DISINFECTING SCOW, HONOLULU QUARANTINE STATION.

best pieces of timber taken from the old houses which were torn down. (8) The construction of an 8-room attendants' quarters, the material for this improvement having been also taken from the old houses just referred to. (9) The extension of the water-pipe system on the island, providing for every building the proper water piping. (10) The filling in of a large hole near by the executive building. (11) The fitting up of general and special storerooms. (12) The providing of covered davits for all of the boats. (13) The providing of a guardhouse at the end of the runway. (14) The development of a paint and carpenter shop. (15) The repairing of the crematory (with the aid of the public works and the health department). (16) The policing of Quarantine Island, requiring nearly three months of hard work. (17) The fitting up of an improvised laundry.

The disinfecting equipment at the quarantine station consists of a steam chamber 16 feet long, 5 feet high, and 5 feet wide. The chamber is equipped with 2 large cars. The steam is supplied from a 40-horsepower boiler. When the new wharf is built this machinery should be moved into the proposed new disinfecting warehouse, and the present building used for laundry purposes.

Our hospital and detention capacity is as follows: A new first-class hospital for quarantinable diseases, capacity 14 beds; an improvised first-class hospital for nonquarantinable diseases, capacity 6 beds; an improvised second-class hospital for quarantinable diseases, capacity 8 beds; two buildings for first cabin passengers, capacity 75 persons; four buildings for second cabin passengers, capacity 310 persons.

Accommodations for troops.

	Troops.
Four buildings for second cabin passengers	300
Unused Asiatic barracks building	150
New elevated tent floors now under construction	1,200
Plat of ground soon to be filled in for tents	200
Total capacity	1,850

A suitable disinfecting wharf connected with the station, estimated cost, $75,000.

DIVISION OF THE CHANNEL WHARF.

At the channel wharf are placed vessels from infected ports not having actual disease on board. Thus are we enabled to take every precaution against infection from either the ship or its personnel, and also to properly inspect all freight for rejection or disinfection of articles forbidden by the regulations. The bulk of the outgoing quarantine work is performed on this wharf, but the former will be described under a separate heading. The channel wharf is completely isolated from the land save for two drawbridges, and is capable of being transformed for practical purposes into a huge lighter by the elevation of these drawbridges. It is 400 feet long and 100 feet wide, and since the dredging was done can accommodate a vessel drawing 28 feet of water. In its present state of complete equipment it is a most useful wharf for our purposes. Its equipment consists of 1 sulphur furnace and boiler, 2 steam chambers with formaldehyde attachments, 2 large and 3 small disinfecting rooms with pipe connections from the sulphur furnace, all pipe connections and suitable sulphur hose for disinfecting vessels, 5 autoclaves, 2 large bathrooms and 2 large dressing rooms, adequate water-closet facilities.

We have bathed and disinfected as many as 800 persons in one day at this wharf. At the present time there is room enough in the end given up to freight for the storage of 1,400 tons of the latter.

Steamers disinfected (incoming quarantine)	2
Vessels disinfected (outgoing quarantine)	18
Steamers placed in quasi quarantine	48
Persons bathed (incoming quarantine)	1,400
Pieces of baggage disinfected (incoming quarantine)	2,000

DIVISION OF INCOMING QUARANTINE.

The boarding is done outside of the harbor, by means of a steam launch. When the launch is laid up for overhauling, a whaleboat manned by a station crew is used to carry the boarding officer. To steamers from noninfected ports only one boarding officer is sent, but to steamers from infected ports, two, three, or more officers and the inspectress are sent. A complete microscopic equipment is carried on board by one of the attendants, in order that every means of establishing a diagnosis may be at hand. We have on several occasions made post-mortem examinations on board of vessels before granting them pratique. It is frequently necessary to make smears of sputum in cases of pneumonia occurring en route from ports infected with bubonic plague. The boarding hours are from 6.30 a. m. until 9 p. m., and in the case of belated mail steamers boarding is done until 12 p. m.

Vessels inspected from foreign ports	139
Vessels inspected from domestic ports	249
Total	388
Passengers inspected	45,142
Crew inspected	30,377

DIVISION OF OUTGOING QUARANTINE.

This work consists of the certification of passengers, treatment of baggage, treatment of freight, disinfection of vessels, inspection of vessels as to their conduct after disinfecting, proper mooring of vessels not requiring disinfection, and the disinfection of wharves.

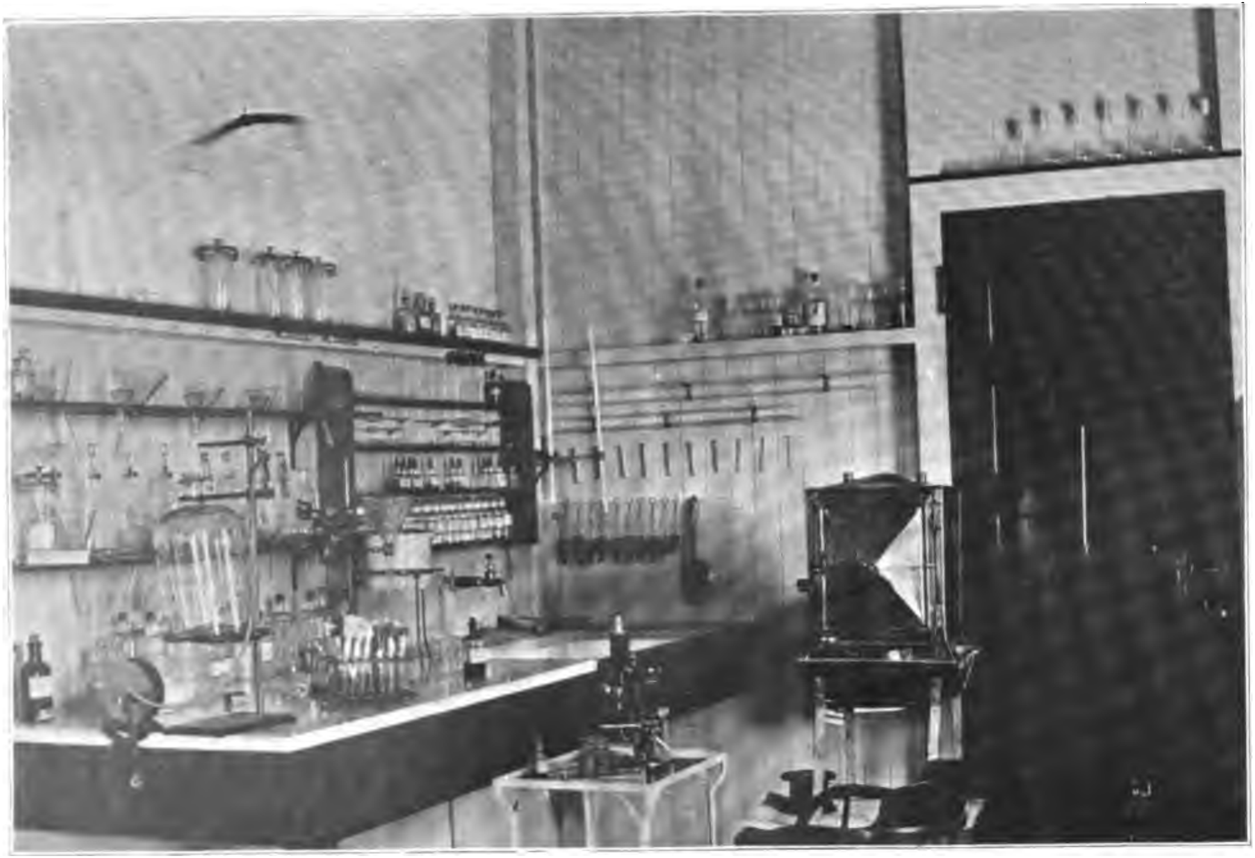
Passengers and crews are required to report at the office and furnish satisfactory evidence as to their place of residence, and according to their status are either given a permit to purchase a ticket without disinfection of baggage, or are first required to deliver their baggage at the channel wharf, where a certificate is given after the temperature is taken or a physical examination made. The names, with places of residences, are made into duplicate lists for a final inspection immediately before the sailing of the vessel, and the lists containing all information sealed and forwarded as part of the ship's papers. After its disinfection all baggage is held until just before the sailing hour and is then delivered by the steamship company. Yellow labels, marked "disinfected," are placed on each piece of baggage. The question of baggage becoming infected en route has never arisen here, as we have declined to certify to the hull of the vessel unless our orders regarding her proper mooring were obeyed. In other words, we would never have certified to passengers or baggage who were embarking in a suspected hull. Every freight shipping order was first brought to the office, where safe articles were viséed and doubtful ones ordered to the channel wharf for disinfection. Every vessel not willing or able to comply with our isolation and rat-funnel rules was disinfected prior to the issuing of a certificate as to her hull. The number of rats killed by this disinfection of vessels has been enormous. In one small vessel 140 rats were found and in one of the interisland steamers several buckets of roaches were found in addition to tubs of rats. The disinfection of the vessels was accomplished by means of our improvised floating plant, which was kept working day and night.

A daily inspection of the harbor was made for the purpose of determining whether vessels after disinfection were complying with our isolation rules and whether vessels not requiring disinfection were keeping the moorings designated by this office.

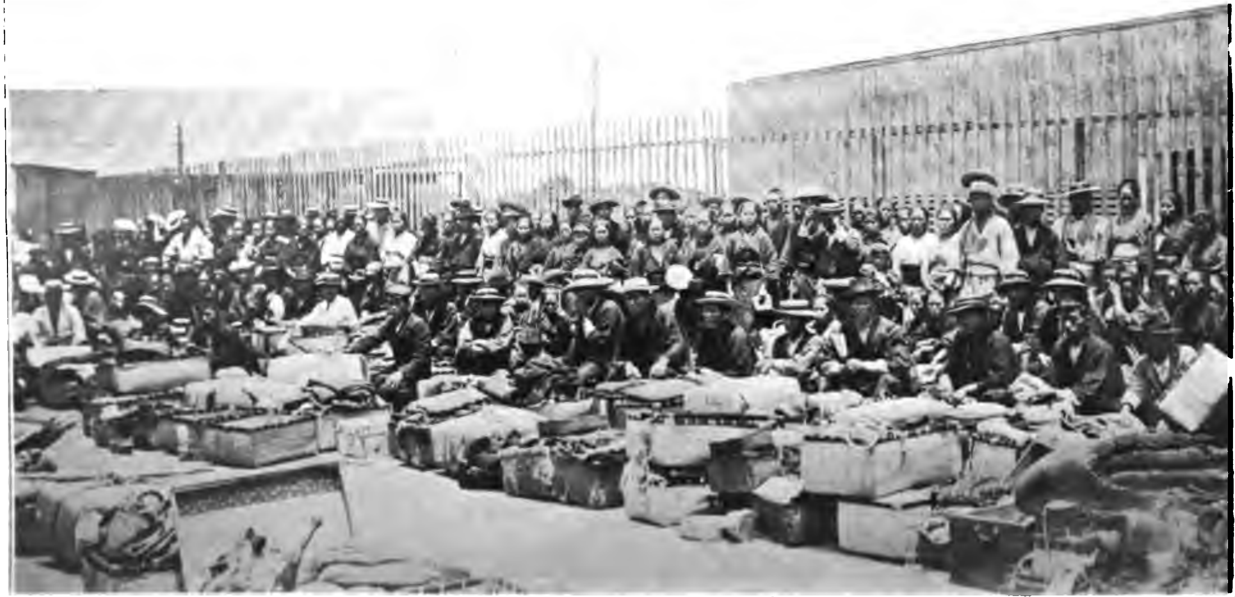
The moorings referred to were the anchorages in the stream and moorings to railroad wharf No. 2, which latter was made rat proof by being cut off from the land and protected by high rat guards. At the suggestion of this office all of the wharves were closed in for sulphur fumigation and all rubbish removed, all rafters whitewashed, and all tanks, gangways, etc., raised from the ground so as to prevent rats or other vermin from making their nests there.

The disinfection of baggage is performed by the steam chambers. The disinfection of vessels is carried out according to the United States quarantine regulations, a 5 per cent volume strength of sulphur gas being used in the holds. Formalin in autoclaves is used in cabins and staterooms. Live steam in holds is used to kill insects.

Steamers inspected and passed	53
Sailing vessels inspected and passed	115
Cabin passengers inspected and passed	1,480
Steerage passengers inspected and passed	767
Steerage passengers rejected	42
Steerage passengers detained under observation	42
Crew inspected and passed	2,129
Crew rejected	2
Hides disinfected	9,891
Pieces of baggage disinfected and so labeled	2,197
Steamers disinfected	23
Sailing vessels disinfected	108
Parcels of freight disinfected	415
Wharves disinfected	11



CORNER OF BACTERIOLOGICAL LABORATORY, HONOLULU QUARANTINE STATION.



MUSTER OF ASIATIC IMMIGRANTS PRIOR TO SEARCHING BAGGAGE FOR FOOD STUFFS, HONOLULU QUARANTINE STATION

DIVISION OF MARINE HOSPITAL RELIEF.

The out-patients are treated in a small office adjoining the quarantine office. The acute diseases requiring hospital treatment are sent to the Queen's Hospital, the chronic diseases to the Victoria Hospital. Chronic cases are frequently transferred to the marine hospital at San Francisco, Cal.

Hospital cases remaining under treatment on September 15, 1901	11
Hospital cases admitted since September 15, 1901	121
Total to be accounted for	132
Discharged	126
On hand July 1, 1902	6
Operations performed	3
Examinations for pilots' license	12
Physical examinations performed	4
Out-patients treated	320
Times relief was furnished	560

DIVISION OF IMMIGRATION INSPECTION.

Total number of immigrants inspected	2,656
Total number of immigrants passed	2,651
Certified as unsound	5
Certified as unsound and deported	1
Certified as unsound and admitted	4

DIVISION OF CORRESPONDENCE AND ACCOUNTS.

This is one of the most important and one of the most exacting divisions of this station, as the work is large, requires time and care for its proper execution, and is performed under very trying circumstances.

Transactions.

Port.	Vessels inspected.	Persons inspected.	Vessels remanded.
Hilo	44	804	0
Kahului	21	290	0
Lahaina	6	72	0
Kihei	0	0	0
Koloa	5	65	0

Respectfully,

L. E. COFER,
P. Asst. Surg., P. H. and M. H. S.,
Chief Quarantine Officer, Territory of Hawaii.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

EXHIBIT 1.

Vessels in port June 5, 1902.

Vessel.	Wharf.	Remarks.
Ship Acme		Outside of harbor.
Bark Pactolus	Old Fish Market	Disinfected.
Ship Dirigo	Railroad	Do.
Schooner James Rolph	Naval Row	Do.
Schooner Rosamond	do	Do.
Bark Carrollton	Railroad No. 2 (isolated wharf)	Disinfection not required.
Bark Olympic	Hackfeld	Disinfected.
Bark Mohican	Old Fish Market	Do.
Ship Servia	Railroad No. 2 (isolated wharf)	Disinfection not required.
Schooner Columbia	Navy No. 2 (isolated wharf)	Do.
Schooner A. B. Johnson	Naval Row	Disinfected.
Barkentine Irmgard	Railroad No. 2	Do.
Bark Oregon	Fort Street	
Aorangi	Pacific Mail	Left for Vancouver.
U. S. N. transport Solace	Channel (United States quarantine wharf)	1 case scarlet fever.
Barkentine S. N. Castle	Irmgard	
Schooner Mary E. Foster	Allen & Robinson	No rats guards; to be disinfected.
Archer	Railroad No. 2	Disinfected.

Exhibit 2.

U. S. M. H. S.

HONOLULU, T. H., ——— ———, 1901.

Permission is hereby given to sell a ticket to ——— ———.

L. E. COFER,
Surgeon, U. S. M. H. S.

Exhibit 3.

U. S. MARINE-HOSPITAL SERVICE,
HONOLULU, T. H.
DISINFECTED.

———————————

L. E. COFER,
———— ————,
Chief Quarantine Officer, Hawaiian Islands.

Exhibit 4.

HONOLULU, HAWAII, *December 19, 1901.*

DISINFECTION OF INTER-ISLAND STEAMERS.

(1) Use steam hose in holds until a temperature of 200 is reached, this to be maintained for four hours. (2) Remove all deck boards and have same washed with bichloride solution 1 to 800. (3) Wash decks outside of deck house with bichloride solution of 1 to 1,000. (4) Inside cabins and staterooms use formalin generated in autoclaves. (5) Battens on hatches; seal up all doors, skylights, ventilators, smokestack, and all openings; treat hold to sulphur dioxide, 25 pounds to each 100 ton measurement, forty-eight hours' exposure—twenty-four hours for iron vessels.

AFTER DISINFECTION.

Keep vessels off wharf at least 6 feet, have suitable funnels placed on ropes, and use coal tar on gangway ladder. After sundown all ladders to be hauled up.

L. E. COFER,
P. Asst. Surg., M. H. S.,
Chief Quarantine Officer, Territory of Hawaii.

Exhibit 5.

HONOLULU, *Hawaii.*

FOR STEAMERS COMING FROM SYDNEY.

Until further notice the following restrictions are hereby ordered on account of existing health conditions at Sydney, New South Wales:

All hand baggage and baggage opened or used on the voyage belonging to persons from Sydney to Honolulu to be disinfected. This applies to second cabin and steerage. All members of crew to be discharged at this port to be bathed and baggage disinfected.

Disinfect all baggage of steerage passengers and bathe all steerage passengers Disinfect all baggage of second-cabin passengers.

The steamship company will provide a launch immediately upon arrival of steamer to convey persons with baggage to be disinfected to the quarantine wharf. The boarding officer will detail an employee to accompany said passengers and their baggage.

NEW BARRACKS BUILDINGS, HONOLULU QUARANTINE STATION.

END OF HOSPITAL WARD, HONOLULU QUARANTINE STATION.

Free pratique can only be issued in the event that there is no disease on board and that these restrictions are duly complied with.

——— ———,
Assistant Surgeon, U. S. M. H. S., Boarding Officer.

In receiving pratique, I promise to assist in having said orders executed.

——— ———,
Master, S. S. ———.

EXHIBIT 6.

[Circular.]

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
OFFICE OF MEDICAL OFFICER IN COMMAND,
Honolulu, Hawaii, ——— ———, *1902.*

To the Captains and Agents of vessels in Honolulu Harbor:

SIRS: To facilitate your passage through quarantine at mainland ports I have to recommend that you comply with the following requirements in order that we may be able to issue you a certificate accordingly: (1) Your vessel to lie not less than 6 feet from the dock, with rat funnels and tarred canvas on all lines. (2) The gangway to be well lighted at night and a special guard stationed there to prevent any rats from going aboard or coming ashore. When it is not practicable to have this gangway guard you will have the gangway raised clear of the dock at night by not less than 6 feet. (3) All persons to be on board by 10 p. m., there to pass the rest of the night. (4) That this office be notified of the intended shipment of all baggage and such freight as hides, bones, scrap iron, gunny bags, household goods, and personal effects. (5) All persons leaving on your vessel to be inspected immediately before sailing, this office to be notified in advance of sailing hour.

Respectfully,
L. E. COFER,
P. Asst. Surg., M. H. S.,
Chief Quarantine Officer, Territory of Hawaii.

EXHIBIT 7.

SPECIAL CERTIFICATE FROM U. S. QUARANTINE OFFICE AT HONOLULU, HAWAII.

Date, ——— ———, 190—.

This is to certify that ——— ——— of ———, from ———, bound for ———, has
[Name of vessel.]
in all respects complied with the special quarantine restrictions hereinafter described, and is to the best of my knowledge and belief free at this time from infectious disease or the danger of conveying the same.

Number of cabin passengers inspected and passed.............................
Number of steerage passengers inspected and passed..........................
Number of pieces of cabin passengers' baggage disinfected...................
Number of pieces of steerage passengers' baggage disinfected................

(a) Vessel unloaded at distance of —— feet from wharf.
(b) Vessel unloaded in midstream.
[Erase line not wanted.]

——— ———,
P. A. Surgeon, U. S. M. S. and S.,
Chief Quarantine Officer, Hawaiian Islands.

To the U. S. QUARANTINE OFFICER,
——— ———.

EXHIBIT 8.

U. S. MARINE-HOSPITAL SERVICE.

OFFICE OF CHIEF QUARANTINE OFFICER FOR THE HAWAIIAN ISLANDS,
Honolulu, T. H., ——— ———, *19*—.

CERTIFICATE FOR PASSENGERS.

The following-named passengers leaving here to-day on the ——— for ——— have been detained under observation for —— days, have had their baggage disinfected, have shown no rise in temperature nor any of the other manifestations of ———, as determined by a suitable physical inspection.

List of certified passengers.

——— ———,
Surgeon, U. S. M. H. S., in Command.

By ——— ———,
Assistant Surgeon, M. H. S.

PHILIPPINE ISLANDS.

LABORATORY AND BOARD OF HEALTH.

AN ACT providing for the establishment of government laboratories for the Philippine Islands.

By the authority of the President of the United States, be it enacted by the United States Philippine Commission that:

SECTION 1. A biological laboratory, a chemical laboratory, and laboratories for the production of vaccine virus and of serums and prophylactics shall be established and maintained by the government of the Philippine Islands.

SEC. 2. The biological laboratory shall be situated at Manila, and shall afford adequate facilities for investigation into and scientific report upon the causes, pathology, and methods of diagnosing and combating the diseases of man and of domesticated animals, and of animals utilized for food, and of plants useful to man, as well as for such other biological work as may be deemed necessary by the board of health for the Philippine Islands, the forestry bureau, the bureau of agriculture, or any other department or bureau of the government.

SEC. 3. The chemical laboratory shall be situated at Manila, and shall afford adequate facilities for investigation and report as to the purity of foods and drinks; as to the composition and properties of gums, resins, drugs, herbs, or other plant products of known or supposed commercial value; as to soils or fertilizers; as to the minerals and minero-medicinal waters of the Philippine Islands, and for such other chemical investigation as may be deemed necessary by the board of health for the Philippine Islands, the department of public instruction, the forestry bureau, the mining bureau, the bureau of agriculture, the customs service, or any other department or bureau of the government.

SEC. 4. Laboratories for the production of vaccine virus and of serums and prophylactics shall be established and maintained at Manila and at such other points in the archipelago as the board of health for the Philippine Islands may advise and the central legislative body of the islands may determine upon.

SEC. 5. There shall be a superintendent of government laboratories, at a salary of $4,000 per year. He shall have charge of the construction and equipment of all government laboratories for the Philippine Islands, and of the purchase of all apparatus, supplies, and books which may be authorized for use in connection with such laboratories. He shall cause to be prepared and shall recommend to the central legislative body of the islands as a basis for appropriation:

(*a*) Plans for a suitable building for the installation of the biological laboratory, the chemical laboratory, and a reference library;

(*b*) Plans for such laboratories for the manufacture of vaccine virus, serums, and prophylactics as may hereafter be authorized;

(*c*) Detailed estimates of the cost of constructing such laboratory buildings;

(*d*) Detailed estimates of the cost of properly equipping the several laboratories and of procuring an adequate reference library, which shall be housed in the same building with the biological and chemical laboratories.

SEC. 6. The superintendent of government laboratories shall make a written report to the chief executive of the insular government on or before June 30 of each year, covering his work for the twelve months preceding that date, and shall include therein a statement of all moneys received and disbursements made during that period.

SEC. 7. (*a*) The superintendent of government laboratories shall be the director of either the biological or the chemical laboratory, as the Commission shall determine, and the other laboratory shall be under the supervision of a director who shall receive an annual salary of $3,500. The two directors shall be experts in their respective lines of work, and shall personally carry on original investigations.

(*b*) They shall appoint all employees of their respective laboratories, subject to the provisions of the civil-service act and of act 25, shall prescribe their duties and shall assign to all persons carrying on investigations in their respective laboratories the necessary laboratory space, apparatus, appliances, and reagents.

SEC. 8. All biological and chemical laboratory work of the several departments and bureaus of the government at Manila shall be carried on in the biological and chemical laboratories by their directors and employees, or by employees of said departments and bureaus. Upon the request of the head of any department or bureau of the government, the director of the biological or chemical laboratory shall make adequate provision for the carrying out of any special investigation desired and duly authorized, either himself undertaking to have it made by the laboratory staff or allowing properly qualified employees of the department or bureau making the request to carry it out under his general supervision, as the head of such department or bureau may prefer.

SEC. 9. The superintendent of government laboratories and the additional director provided for in section 6 shall be appointed by the Commission. The officers and employees of the laboratories for the manufacture of vaccine virus, serums, and prophylactics shall be appointed by the commissioner of public health, subject to the provisions of the civil-service act and of act 25.

SEC. 10. The officers or employees in immediate charge of the laboratories for the manufacture of vaccine virus, serums, and prophylactics shall furnish the superintendent of government laboratories from time to time with detailed lists of the apparatus and supplies which are necessary for the adequate equipment and maintenance of their respective laboratories.

SEC. 11. This act shall take effect on its passage.

Enacted, July 1, 1901.

[No. 157.]

AN ACT providing for the establishment of a board of health for the Philippine Islands.

By authority of the President of the United States, be it enacted by the United States Philippine Commission that:

SECTION 1. A board of health is hereby created for the Philippine Islands, to be known as the board of health for the Philippine Islands.

SEC. 2. The Commission shall appoint:

(*a*) A commissioner of public health, at a salary of $6,000 per year, who shall be a duly qualified physician who has taken a doctor's or licentiate's degree in medicine from a reputable medical school.

(*b*) A sanitary engineer, at a salary of $3,500 per year, who shall be the city engineer of Manila.

(*c*) A chief health inspector, at a salary of $3,500 per year, who shall be a duly qualified physician who has taken a doctor's or licentiate's degree in medicine from a reputable medical school.

(*d*) A secretary of the board of health, at a salary of $2,500 per year, who shall be a duly qualified physician who has taken a doctor's or licentiate's degree in medicine from a reputable medical school.

SEC. 3. The board of health hereby established shall consist of the commissioner of public health, the chief health inspector, the sanitary engineer, the superintendent of government laboratories ex officio, and the secretary of the board. The commissioner of public health shall be chairman of the board. The chief surgeon of the United States Army in the Philippine Islands, the chief officer of the Marine-Hospital Service in the Philippine Islands, and the president and vice-president of the association of physicians and pharmacists of the Philippine Islands shall be honorary members of the board, but shall not be entitled to vote. Seasonable notice of all meetings of the board shall be given to each member.

SEC. 4. (*a*) The insular board of health shall have general supervision over all the interests of the public health in the Philippine Islands, and shall especially study their vital statistics.

(*b*) It shall make inquiry and investigation into the causes, pathology, and means of preventing diseases, especially epidemic diseases, including those of domestic animals, together with the sources of mortality and the effects of localities, employments, conditions, habits, foods, beverages, and medicines on the health of the people, and into the chemical composition and medicinal properties of the mineromedicinal waters of the archipelago.

(*c*) It shall disseminate useful information upon these and other kindred subjects among the people.

(*d*) It shall draft and recommend to the central legislative body of the islands suitable sanitary laws, including laws governing the admittance of persons to the practice of medicine and surgery, pharmacy, dentistry, midwifery, embalming, and undertaking; laws to control offensive and dangerous industries or occupations; and laws for the extension of the service of the insular board of health into the several departments, provinces, and municipalities of the Philippines.

(*e*) It shall cause to be prosecuted all violations of sanitary laws.

(*f*) It shall have authority to require all health boards and their officers to forward to the insular board of health copies of all their reports and publications, and such other information in regard to sanitary matters as it may request.

(*g*) It shall have power to require reports and information concerning any matters with respect to which it may need information for the proper discharge of its duties from all public dispensaries, asylums, hospitals, infirmaries, prisons, penitentiaries, schools, and from the managers, principals, or officers thereof, and from all other public institutions, their officers or managers, and from the proprietors, managers, lessees, and occupants of all places of public resort throughout the islands, or from common carriers. Refusal to give such information when called for by the board shall be a misdemeanor punishable by a fine not exceeding $100 or imprisonment not exceeding three months, or both, in the discretion of the court.

(*h*) It shall have power and authority to make and enforce regulations for preventing and suppressing contagious or epidemic diseases of man or animals; to abate nuisances endangering the public health; to remove the cause of any special disease or mortality; and to make and enforce such interior quarantine regulations as it shall deem necessary in the city of Manila and all other cities, municipalities, provinces, departments, or places where there are no local boards of health or health officers, and in places where boards of health or health officers exist, but where the sanitary laws or the regulations of the board are not being carried into effect; and the pow conferred upon municipal councils by section 39, subsections *l*, *m*, *n*, *o*, *p*, *q*, *r*, and *s* of the municipal code shall be exercised, subject to the supervision and control of the insular board of health whenever in its opinion the exigency so requires.

(*i*) It shall have power to engage suitable persons to render any special sanitary service or to make or supervise investigations and examinations requiring expert skill, and to prepare plans or reports relating thereto.

(*j*) It shall make no contracts and incur no liabilities in excess of the amounts duly appropriated for its use by the central legislative body of the islands.

(*k*) It shall decide upon suitable locations for the necessary laboratories for the production of vaccine virus, serums, and prophylactics, and shall recommend the construction of such laboratories to the central legislative body of the islands. The virus, serums, or prophylactics produced at these laboratories shall be distributed and used under the direction of the commissioner of public health.

(*l*) It shall serve as the local board of health for the city of Manila.

Sec. 5. (*a*) The commissioner of public health shall be the chief executive officer of the board and shall exercise general supervision and control over the various branches of its work.

(*b*) He shall from time to time furnish the central legislative body of the islands lists of the employees necessary properly to carry on the work of the board, and shall appoint all duly authorized employees, subject to the provisions of the civil-service act and of act 25.

(*c*) He shall prepare quarterly estimates showing the probable expense of conducting the work of the board for the coming three months, and shall submit such estimates to the central legislative body of the islands as a basis of appropriations.

(*d*) He shall be empowered to require of the officers of the board annual reports of their work and such special reports as he may desire.

(*e*) Subject to the sanitary laws of the islands and the regulations of the board, he shall have direct supervision and control over all hospitals for contagious or infectious diseases. He shall provide for the detection of persons suffering from such diseases and for their isolation until danger of their spreading disease is past. He shall provide for general and systematic vaccination of the inhabitants of the Philippine Islands and for their inoculation with serums or prophylactics, should such a course at any time become necessary, and shall have immediate direction of the work of suppressing epidemic disease of man and domestic animals.

(*f*) He shall make a written report to the chief executive of the insular government on or before June 30 of each year. This report shall cover the general sanitary condition of the Philippine Islands and the work of the board and of its officers and agents during the preceding twelve months. It shall also include a statement of all moneys received and of all disbursements made during the same period.

(*g*) He shall submit to the chief executive of the insular government such special reports as occasion may demand or as the chief executive may require.

SEC. 6. Subject to the sanitary laws of the islands and the regulations of the insular board of health, the chief health inspector shall make, or cause to be made, regular inspection of the work of all municipal boards of health; of the work of all employees of the insular board of health; of the cleaning of sewers, streets, walks, alleys, public squares, and parks; of the collection and disposition of garbage, dead animals, night soil, and contents of cesspools; and of the sanitation of houses, factories, mills, schools, prisons, dairies, markets, meat shops, bakeries, public water supplies, public bath houses, wells, cisterns, cemeteries, undertaking establishments, asylums, jails, barracks, barrooms, theaters, and all public institutions and places of public resort. For this purpose he may enter any of the above-mentioned buildings, institutions, or places of public resort.

SEC. 7. (*a*) The sanitary engineer shall prepare the plans and specifications for all waterworks, drainage or sewer systems, and crematories for the city of Manila and for disinfecting apparatus or mechanical sanitary apparatus of whatsoever kind for public institutions in the city of Manila and for alterations in such public works or apparatus. He shall construct or install or shall supervise the construction or installation of all such public works or apparatus as may be provided for by law, and they shall not be accepted until he shall certify that the plans adopted by the municipal government have been faithfully carried out.

(*b*) Upon request of the municipal council of any municipality he shall consider and report to them upon any plans and specifications for municipal waterworks, drainage or sewer systems, crematories, disinfecting apparatus, or mechanical sanitary apparatus of any kind which the council may submit to him.

SEC. 8. The secretary of the insular board of health shall keep its records, shall compile its statistics, and shall discharge the other usual duties of secretaries.

SEC. 9. The biological and chemical work of the insular board of health shall be carried on in the government biological and chemical laboratories either by the regular staffs of those laboratories or by the employees of the board, as the commissioner of public health may determine.

SEC. 10. This act shall take effect on its passage.

Enacted July 1, 1901.

MARIVELES QUARANTINE.

The quarantine station at Mariveles, near Manila, is now complete and is one of the largest and best equipped stations in the world. Owing to the prevalence of plague, cholera, and smallpox in the Philippine Islands, the work of the quarantine stations in said islands has been very laborious, as will be seen by the reports of the medical officers, appended hereto.

MANILA AND SUBPORTS.

REPORT OF CHIEF QUARANTINE OFFICER OF THE PHILIPPINE ISLANDS, P. A. SURG. J. C. PERRY.

OFFICE CHIEF QUARANTINE OFFICER, PHILIPPINE ISLANDS,
PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
Manila, P. I., July 29, 1902.

SIR: I have the honor to hereby submit report of the quarantine service in the Philippine Islands for the fiscal year ended June 30, 1902, and in doing so I have deemed it advisable to submit in separate tables the work performed for the entire year, and that from September 15, 1901, to June 30, 1902, date of supplemental report.

Since the work relative to station equipment was embodied in supplemental report only that which has transpired since September 15, 1901, will receive consideration herein.

The Mariveles Quarantine Station was opened on September 26, 1901, with Asst. Surg. J. W. Amesse in temporary charge, since he was the only officer available for this post at that time, as the request to the Bureau to detail an additional officer for duty at Manila had not received consideration. The boarding duty in addition to an excessive amount of executive work devolved upon the chief quarantine officer for the succeeding two months, until Asst. Surg. J. D. Long arrived and was available to assume command of the Mariveles station on December 1, 1901.

In this connection I wish to invite attention to the inadequate number of officers on duty at the Manila station, since it necessitates continuous work of the most trying character in a tropical climate at the risk of sickness and physical disability of the officers on account of overwork with no opportunity for relaxation. Two officers at Manila and one at Mariveles is not a sufficient number to perform the great amount of work at these stations. It is true the work has been done, and thoroughly, but it has been accomplished by impairing the health of the officers. Add to this the great increase of work incident to a severe cholera epidemic and that produced by the institution of an outgoing quarantine service; consider the great number of vessels disinfected, the large number of troops returning to the United States, the immense quantity of baggage disinfected, and it will be apparent to anyone who gives the subject careful thought that the personnel of this station has been taxed to their utmost physical ability.

The boarding officer is on duty continuously every day from 6 a. m. to 6 p. m., and the officer at Mariveles has had extremely hard work, often on duty from 5 a. m. to 11 p. m., disinfecting ships, personnel, and baggage. He has only been able to leave the station, even to the adjacent village, two days during the past four months.

What has been said relative to the officers applies to the chief clerk at Manila; he has been obliged to work day and night in order to keep the clerical work even approximately up to date. It has been impossible to secure adequate clerical assistance, since the Philippine Commission has not appropriated money for the salary of an additional clerk, although the necessity was stated when the amount was included in the quarterly estimate for quarantine expenses.

When the acting assistant surgeon resigned in January, 1902, the Bureau was requested to detail an additional officer for duty here to fill this vacancy, since it would lighten the labors of the assistants at Manila and Mariveles, and, besides, one officer would be available for temporary duty in the event of illness of some of the other officers. This detail was never made, not even when the cholera epidemic occurred.

The boarding of vessels is done at Manila from 6 a. m. to 6 p. m., except those vessels that arrive from infected ports. The latter are required to call at Mariveles for examination, disinfection, and detention if necessary before coming to Manila, and are again boarded here to see that they have complied with the above requirements. If a vessel arrives with a quarantinable disease on board the boat is immediately remanded to Mariveles for disinfection and detention. The launch *Zapote*, owned and operated by the quarantine service, is used for boarding duty at Manila. This launch has already been described in previous reports.

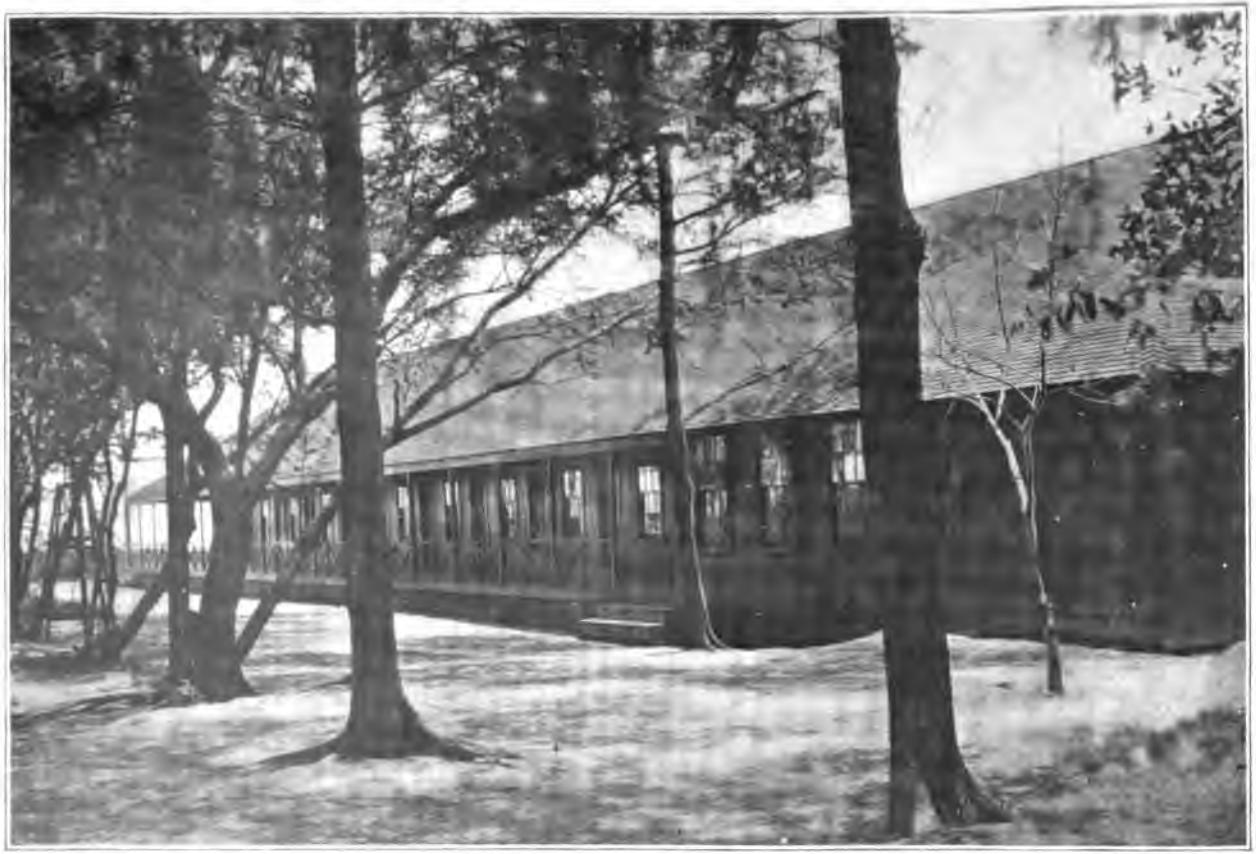
The boarding of vessels at Mariveles is done by means of a rowboat, as the small launch intended for use at this station was lost in being brought over from Hongkong. The means available are not satisfactory, since not having a small launch has proved a hardship to the officer in command on account of the great amount of inspection work necessary during the cholera epidemic.

The inspection of vessels and their personnel is rigid at both Manila and Mariveles. The ships are critically examined, inquiry made concerning the food and water supply, the manifests examined for food products and other articles that may have been shipped from infected ports and that have not been certified to by officers of the Service on duty in connection with the United States consulates in foreign countries; and the glandular regions of Asiatics, arriving from ports suspected of being infected with plague, are examined in order to detect mild and ambulant types of the disease. If any of the passengers or crew are ill in such a way as to be suspicious, the vessel is either held or remanded to Mariveles for quarantine detention, for observation, or for disinfection if necessary.

The inspection work at Cebu and Iloilo has been conducted in the same manner as at Manila, and especial attention has been paid to the examination of vessels arriving from Hongkong and Singapore. Food products on these boats that have not been certified are invariably rejected and not allowed to be landed at those ports. The launch *Sanidad* is available for boarding work at Cebu, and the launch *Mariveles* is used for a similar purpose at Iloilo. These boats have been described in previous reports. There is one officer at Cebu and one at Iloilo.

The quarantine work at Zamboanga and Jolo, other ports of entry, has been performed by the surgeons of the United States Army stationed there. Only a few vessels enter these places from foreign ports, and it has not been deemed necessary to request detail of regular quarantine officers for duty at these ports.

While the officers mentioned are not under the jurisdiction of this office, still I have sent them letters embodying the regulations enforced at this and other ports,



NEW BUILDINGS FOR SALOON PASSENGERS, HONOLULU QUARANTINE STATION.

and they have conducted the quarantine in accordance with the suggestions given. I have supplied wood alcohol for formaldehyde disinfection to the officer at Jolo, and these officers have advised me of anything of importance. Upon my request they have rigidly enforced the regulations relative to food products and other prohibited articles coming from infected ports, and no infected vessels have arrived there during the past year.

During the year Aparri has been made a port of entry; and although as yet few vessels from foreign ports have called there, still I think some of the boats from Hongkong and Amoy will in all probability do so in the near future. I believe that this will be a port of secondary importance for the next year, but since it is the outlet for a large and populous section of northern Luzon some vessels from foreign ports will probably call there before coming to Manila, and for this reason a quarantine officer should be detailed for duty at that port. At present the army surgeon stationed there is performing the quarantine work.

The disinfection of baggage has been extremely heavy during the year, since in addition to that on island boats rendered necessary on account of the plague and cholera epidemics, the effects of 33,837 passengers returning to the States have been disinfected. The baggage on outgoing boats is disinfected at Manila by the formaldehyde process; and although the means at hand are not as satisfactory as they might be, still the work has been accomplished, and the best proof that the disinfection is effective is evidenced by the fact that notwithstanding the great number of troops returned to the States, no infectious or contagious disease can be traced to this source. When it is taken into consideration that 110,713 pieces of large baggage have been disinfected at the Manila and Mariveles stations, it will be seen that this station has risen to one of the first importance conducted by the Marine-Hospital Service; in fact, the work performed here represents an equal amount of the sum total of several of the larger quarantine stations in the United States. This has been accomplished with a very small personnel, and I believe I am correct in saying that no greater amount of important work has been accomplished by a personnel of three officers during a corresponding period of time.

The disinfection of vessels, except in the case of very small boats, is not attempted at Manila, but is performed at Mariveles. In fact, all infected vessels are remanded to the latter place for thorough disinfection and quarantine detention. This work has also been heavy, since 382 vessels have been disinfected during the year. Many of them had cases of cholera occur on board while in quarantine prior to sailing; others were ships from Hongkong and Amoy with cases of plague on board, and the balance were either disinfected on account of coming from near-by ports infected with cholera and plague, or for the purpose of killing rats on board as a precautionary measure to prevent the introduction of plague into Manila or island ports through their agency.

The Mariveles station, which has been designed, constructed, and equipped since the Marine-Hospital Service assumed charge of the maritime quarantine work in the Philippines, is the most modern and best equipped in the Orient, and one that will stand the test of intelligent criticism, the equipment and management of which will bear favorable comparison with most in the world. Ships of the largest size can come directly alongside the wharf, which is 400 feet long and 45 feet wide, so as to insure quick disinfection of both ship and personnel. The disinfection shed, 150 feet long is equipped with two 16-foot Kinyoun-Francis steam disinfecting chambers with all latest improvements, which, with transfer tables and ample steam from a 70-horsepower boiler for operation, insures rapid disinfection of baggage. The chambers are equipped with formaldehyde apparatus for disinfection of fine fabrics and articles that are injured by steam. Two sulphur furnaces are installed with sufficient pipe to extend the entire length of the wharf, so that in using sulphur the necessary quantity of fumes can be rapidly introduced, and any compartment of the largest ship can be reached with facility. The bath houses are also located on the wharves as well as the detention room for the passengers after the bath. The working capacity of the plant is the bathing and disinfection of the clothing and baggage of 150 passengers an hour, the time necessary for one of the Hongkong boats with an ordinary complement of passengers being about three hours. Since the method of handling the passengers and the baggage during the process of disinfection was fully described in my annual report for 1901, it will not be repeated here.

The station is provided with ample means for the detention of suspects, three barrack buildings, so arranged as to provide for six segregation groups, being available for this purpose. One thousand steerage and 80 cabin passengers can be placed in barracks at one time and properly cared for, and during the year 12,158 persons were detained in the buildings at the station for a period of five days or longer. These buildings were built during the preceding year, and have already been fully described in annual report for 1901.

The hospital is ample and consists of two wards, one of which is used for those sick from contagious diseases, and the other for patients suffering from other diseases. Proper isolation can be effected and this fact was borne in mind in designing the building. During the year the following cases have been treated at the Mariveles station:

Report of patients treated in hospital at the Mariveles Quarantine Station during the fiscal year 1902.

Disease.	Number of cases.	Nationality.				Result.	
		Americans.	Europeans.	Filipinos.	Chinese.	Recovery.	Death.
Smallpox	2	1		1		2	
Measles	1				1	1	
Plague	2				2		[illegible]
Cholera	21	7	2	12		[a] 5	[illegible]
Dysentery	1			1			[illegible]
Beriberi	9			3	6	5	4
Valvular disease of heart	3			2	1		[illegible]
Total	39	8	2	19	10	13	[illegible]

[a] Three Americans and 2 Filipinos.

The small number of cases of cholera treated in the hospital is accounted for by the fact that most of the cases were removed at Manila before the vessels were remanded to Mariveles.

During the year a cabin-passenger barracks has been constructed at a cost of $29,097.87. This building is two stories with a porch on the front and ends, and is well suited for the purpose it is intended to serve. It is 141 feet 6 inches long and 43 feet wide, having a total of 34 rooms, divided into 8 suites by central and lateral halls. The dining room is situated on the back of the central portion and is 25 feet by 22½ feet. This is also two stories in height, the lower floor being the dining room and the upper divided into 6 rooms, which are intended for the accommodation of the servants of the cabin passengers. The kitchen is located back of the dining room, the two being connected by a covered passage; is 25 feet by 15 feet; has tiled floors, and is equipped with range and two sinks with hot and cold water connections. The toilet room is situated to the rear of one wing, is two stories, and equipped with water-closets, stationary washstands, bath tubs, and shower baths, with hot and cold water connections.

The Mariveles Station has also been equipped during the year with an electric lighting plant at a cost of $8,000, although the final payment of $2,000 has not yet been made on account of alterations necessary to make the installation conform with the specifications. The plant is 30 kilowatt dynamo with direct connected engine, and is large enough to provide lights for any increase in the number of buildings that the future importance of the station may render necessary. Three arc lights are placed on the wharf and three in the grounds, which sufficiently light the reservation. The plant has been in operation for the past four months, and has proved of incalculable value, since vessels are now disinfected at night as well as during the day.

Since the operation of the large electric lighting plant is expensive on account of the amount of coal used, it is only run during the time that persons are detained in quarantine, or in order to perform disinfection work at night. However, for economy and to avoid the risk of using coal oil for lighting purposes, it is proposed to install a forty-light dynamo, to be operated by a water wheel, for the purpose of furnishing lights to the officers and attendants' quarters and other buildings that are in continuous use, since there is sufficient pressure on the water main to operate the same without cost except for the installation. A contract has already been awarded for this work, as well as for the installation of a watchman's clock with six stations, the total cost to be $1,100.

A water-pressure regulator, with extra valves to the water system, has been installed during the year at a cost of $480. This was found necessary to protect the plumbing, as the pressure on the pipes was so great as to cause the water-closets to be constantly out of order.

The barge *Protection* has been equipped as a floating disinfecting plant for Cebu during the year. The boat is 118 feet long, 25 feet wide, and 9½ feet deep. It is equipped with two 9½-foot Kinyoun-Francis steam disinfecting chambers with formaldehyde apparatus, one 40-horsepower vertical boiler, one sulphur furnace, fan engine, one portable formaldehyde autoclave, and one bichloride pump.

A floating plant has also been equipped for Iloilo, the *Esmeralda*, a dismantled schooner, having been bought for the purpose. The boat is 96 feet long, 20 feet wide, and 9 feet deep. The equipment is the same as that of the *Proteccion*. The cost of the two barges has been $40,000. These plants will furnish ample means for disinfection work at Cebu and Iloilo, and these stations will not need further equipment at present. At the same time these stations will serve for disinfection and treatment of infected vessels arriving at smaller ports, since those arriving at Jolo and Zamboanga and to the south can be remanded to Iloilo, and those to the south and east can be easily sent to Cebu without much loss of time.

It has been necessary during the year to issue several circular letters relative to quarantine and to institute various protective measures to prevent, if possible, the introduction of contagious or infectious diseases into the Philippine Islands.

On account of the severe epidemic of plague that prevailed in Hongkong and Amoy during the spring and summer of 1901 the native and Asiatic steerage passengers were not brought from May 1 to September 30, 1901. This afforded the best protection to the Philippine ports, and was the same procedure as that followed in the preceding year. It was pointed out to the steamship agents that if this class of passengers were brought it would render their vessels suspicious and liable to infection, and that it would be necessary to impose quarantine in order to protect the Philippine ports. This restriction was removed on September 30, 1901, after the subsidence of the plague epidemics.

The outgoing quarantine imposed on vessels sailing from Manila to island ports, on account of the prevalence of plague in Manila, was discontinued on September 30, 1901, owing to the improved conditions in the city. The following circular letter was sent to the local agents of vessels:

[Circular letter.]

OFFICE CHIEF QUARANTINE OFFICER FOR THE PHILIPPINE ISLANDS,
MARINE-HOSPITAL SERVICE,
Manila, P. I., September 25, 1901.

To shipowners and agents, Manila, P. I.

SIRS: You are hereby informed that, in view of the fact that the plague epidemic has about subsided, the inspection of outgoing vessels and the disinfection of baggage of the native and Chinese passengers will be discontinued on the 30th of September.

Ships must secure bills of health as at present.

Respectfully,

J. C. PERRY,
Passed Assistant Surgeon, U. S. Marine-Hospital Service,
Chief Quarantine Officer for the Philippine Islands.

On December 17, it having previously been demonstrated that the rats in Manila were infected with plague to the extent of 1½ to 2 per cent, and in order to eliminate this factor in spreading the disease to island ports, and to assist the board of health in the crusade for the extermination of these animals, I ordered that all vessels sailing from Manila to United States or island ports should be disinfected with sulphur in order to destroy the rats on board. This disinfection was also practiced on the Hongkong boats for the purpose of adding further protection to Manila.

Circular letter to agents is embodied herein:

[Circular letter.]

OFFICE CHIEF QUARANTINE OFFICER FOR THE PHILIPPINE ISLANDS,
MARINE-HOSPITAL SERVICE,
Manila, P. I., December 17, 1901.

To shipowners and agents, Manila, P. I.

SIRS: In view of the fact that plague still exists in the city of Manila and that 2 per cent of all rats, as demonstrated by the board of health's examinations, are affected with this disease, it becomes necessary to take active measures to prevent its spread to other ports of the islands by importation of infected rats.

It has been demonstrated that rats are the principal if not the only factor in the spread of plague, and ships almost invariably become infected from this source; therefore I deem it necessary to disinfect all vessels of whatever size or nature sailing from Manila to other Philippine ports, in order to destroy the rats on board and thereby prevent the ship from becoming infected and carrying plague to other places.

You are hereby notified that this disinfection will commence on Monday, December 30, 1901, and will continue until all vessels have been disinfected for killing rats. This work will be done in Manila when the ship is unloaded and before new cargo is taken on board. It will only be necessary to delay the vessel about twelve hours, or not at all if the ship is unloaded during the afternoon, so that sulphur can be placed in the ship and the hatches of the vessel kept closed during the night (about twelve hours), as on the following morning the loading can be commenced.

No vessel leaving Manila after the date specified will be granted a bill of health until this disinfection has been done.

You are requested to notify this office promptly at what hour and date the vessel will be unloaded and ready for disinfection, and the place in the river at which the boat is anchored. This is essential to facilitate the work and cause as little delay to the vessel as possible.

Trusting I will have your hearty cooperation in this matter,

Respectfully.

J. C. Perry,
Passed Assistant Surgeon, U. S. Marine-Hospital Service,
Chief Quarantine Officer for the Philippine Islands.

On March 3, 1902, Asst. Surg. J. W. Kerr, United States Marine-Hospital Service, cabled that cholera was present in Canton and that he had notified the steamship companies that the regulations would be enforced from that date relative to food products and other articles that were prohibited shipment from cholera-infected ports. Rumors of the presence of cholera in Canton had been heard, but it was impossible to verify the truthfulness of them. I immediately notified Assistant Surgeon Kerr that I would require the most rigid inspection and disinfection of Asiatic passengers; that food products and other articles prohibited by regulations would not be allowed to land unless certified by him as coming from noninfected ports; and that quarantine would be imposed on vessels arriving from Hongkong in the event of the cholera becoming epidemic in Canton or appearing in Hongkong.

In this connection I wish to state, as pertinent to the manner in which cholera was introduced into Manila, that this city is the greatest vegetable market in the Orient, since nothing of this nature is produced in the Philippines and everything is imported. Nearly all these vegetables—potatoes, cabbage, celery, and lettuce—come from Canton and the West River country adjacent. The Chinese method of fertilizing plants is too well known to mention, and the danger of such articles as cabbage, lettuce, and celery, which are often eaten in the uncooked state, is apparent when the possibility that a disease like cholera has prevailed in the territory in which they have been grown.

On the 8th of March one or two cases of cholera were reported in Hongkong, but the disease was probably there before, as we now know that cholera had existed in epidemic form in Canton for some time before its presence was detected, and it is difficult to see how Hongkong could have escaped with the free and unobstructed intercourse between the two cities. On the 14th of March a vessel arrived from Hongkong with cholera noted on the bill of health, and in response to a telegram sent on the day following Assistant Surgeon Kerr stated that 12 cases had occurred up to the 16th of the month. On the 17th of March a five days' quarantine was declared against vessels arriving from Hongkong, and the following circular letters were sent to the steamship agents here, at the same time telegraphing Assistant Surgeon Kerr to that effect and requesting him to notify the Hongkong agents.

[Circular letter.]

Office Chief Quarantine Officer for the Philippine Islands,
Marine-Hospital Service,
Manila, P. I., March 17, 1902.

To the steamship agents, Manila, P. I.

Sirs: In view of the fact that 12 cases of cholera have occurred in Hongkong since the 12th instant, and a further spread of the disease is expected, I have the honor to inform you that all vessels arriving from Hongkong will be quarantined upon arrival at ports in the Philippine Islands for a sufficient period of time to complete five days from date of sailing. You will please notify your agents in Hongkong that all vessels for Manila must call at Mariveles for this detention.

Vessels for Australian ports taking passengers in Hongkong, making Manila a port of call, are subject to the same regulations.

You are also notified that articles of merchandise that can not be certified to by Doctor Kerr in Hongkong, if brought, can not be landed, and must be returned to Hongkong.

Respectfully,

J. C. Perry,
Past Assistant Surgeon, U. S. Marine-Hospital Service,
Chief Quarantine Officer for the Philippine Islands.

[Circular letter.]

OFFICE CHIEF QUARANTINE OFFICER FOR THE PHILIPPINE ISLANDS,
MARINE-HOSPITAL SERVICE,
Manila, P. I., March 19, 1902.

To the steamship agents, Manila, P. I.

SIRS: I have the honor to inform you that the shipment of the following articles from places infected with cholera are prohibited by the United States Quarantine Regulations, and must not be brought to Philippine ports:

As ballast: Earth, loam, soft or porous rock.

Food products: Unsalted meats, sausages, dried and smoked meats, rennets, fresh butter, fresh milk (unsterilized), fresh vegetables.

Merchandise, etc.: Bedding, personal effects (unless disinfected), rags, old jute, old gunny, old rope, human or other hair (unmanufactured), bristles, wool, hides, and feathers.

Miscellaneous: Gelatine, glue, glue stock, fish glue, fish bladders, sausage casings, bladders, and dried blood, should not be shipped if there has been any possibility of their infection in the process of preparation.

This regulation will apply to Canton, West River Country, Hongkong and surrounding districts, Macao, Amoy, Singapore, Batavia, and probably Swatow and Foochow at an early date.

I strongly advise all agents to refuse to take Asiatic and native steerage passengers from Hongkong and Amoy, as the danger of sickness actually occurring on board would be much increased and subject the ship to a much longer period of quarantine.

You are hereby notified that vessels bringing steerage passengers from Amoy will be detained five full days in quarantine at Mariveles after the completion of disinfection at that station, and upon the appearance of plague in Amoy the period of quarantine will be made longer if this class of passengers are brought.

Respectfully,

J. C. PERRY,
Passed Assistant Surgeon, U. S. Marine-Hospital Service,
Chief Quarantine Officer for the Philippine Islands.

The authorities here were notified of the conditions, and were informed that in my opinion the situation was grave and that Manila was in serious danger from invasion of cholera, although every precaution was being taken to prevent the disease gaining entrance.

On March 20 cholera was detected in Manila, the first case was that of a Filipino who lived in the Farola district near the mouth of the Pasig River, and was taken to the San Juan de Dios Hospital for treatment; he rapidly grew worse, and since the board of health, acting on the information I had given, had requested the physicians of the city to report any cases presenting the symptoms of cholera, it was reported, and was seen by members of the board of health and myself a few hours later. During the night of the same day a second case suffering from the same disease was admitted and died before morning, the second case dying on the second day of the disease. These cases had been isolated by the hospital authorities and were considered suspicious of cholera if not the disease itself, but as it was a matter of such extreme importance, a positive diagnosis was reserved until bacteriological examinations had been completed. This examination confirmed the diagnosis of cholera, and energetic measures were at once instituted to detect other cases as early as possible, and to destroy the centers of infection, in an attempt to stamp out the disease. Cases continued to occur in the Farola and the adjacent districts of San Nicolas and Tondo.

The question of extreme importance to both the board of health and especially to this office was: How did the infection enter, through what means or agents? I know positively that no vessel arrived prior to that time with sickness of even a suspicious nature on board, and consequently it could not have been introduced through passengers or baggage. This statement is further borne out by the fact that all the first cases were among the Filipinos that had not been out of Manila for months, and not among the Chinese, the class of passengers that had landed. I think that cholera was unquestionably introduced into Manila by infected vegetables from Canton, and in this the board of health concurs, but it has been impossible to trace it to any particular cargo of such products. There is no question but that the cholera bacillus will retain its vitality for a considerable length of time on fresh vegetables, and these articles were brought to Manila in large quantities while cholera was more or less epidemic in Canton, prior to the time its presence became authentically known, and the shipment of vegetables stopped. Another possible manner was the smuggling on shore at night of vegetables that had been concealed on board vessels sailing after these articles had been prohibited. That vegetables were concealed on board is evidenced by the fact that some were found hidden in lockers, coal bunkers, and other portions of the ship, on several of the vessels when searched relative to this particular matter by the quarantine officers. It is possible that all were not found, and that those not detected were smuggled on shore at night. The incentive was present, as the price of vegetables had materially advanced since their shipment from Hongkong had been prohibited. A third possible source, through the same agents, was the arrival of the steamship *Rubi* on the night of the 16th of March with a large cargo of cabbages and potatoes, which Assistant Surgeon Kerr had refused to certify. Permission to land any of these articles was refused and the captain was ordered to return them to Hongkong, or if the cabbages spoiled to throw them overboard in the China Sea, but under no circumstances to do so in Manila Bay as they would float ashore and the natives would eat them. Some of them may have been smuggled ashore, but I have been unable to prove this, although I am convinced that some smuggling was done from the ships by the natives, since Chinese stowaways have been landed in this manner. The fact remains, however, that the first cases of cholera occurred in the Farola district, a densely populated peninsula between the mouth of the Pasig River and an arm of the bay. Numerous small vegetable shops existed in this district, and here lived many of the stevedores engaged in unloading cargo on the ships, fishermen who ply their vocation on the bay by night as well as by day, and those engaged in petty smuggling. About this time cabbages were also found on the beach, having been thrown overboard from some vessel and drifted ashore.

The board of health immediately instituted rigid measures for suppressing the disease, but on account of the ignorance of the natives and their opposition to the measures enforced, the regulations were not effective, although the epidemic was held in check to an appreciable degree.

At an early date some of the provinces near Manila were infected and the epidemic had passed through province after province practically unhindered in its march. However, since I will render a separate report on the cholera epidemic, space will not be taken up here in describing it.

Upon the appearance of cholera in Manila the necessity for protecting the provinces against the introduction of the disease by vessels was apparent, and consequently, on the 21st of March, a five days' quarantine was declared on all vessels sailing from Manila for island ports before being allowed to sail. The same regulation was applied to United States army transports sailing for United States ports, since a large number of troops were being returned at this time. That the latter was a wise measure, not only for the protection of the personnel of the ships, but also for the United States ports, has been demonstrated by the occurrence on board of cases of cholera on most of the transports while serving their five days' quarantine detention. This quarantine has been effective, since, although 45 vessels have had cases of cholera occur on board while serving their quarantine here, no vessel has had the disease develop after discharge from quarantine, and no port in the Philippine Islands has been infected by vessels from Manila with the exception of Nueva Caceres, the latter being infected soon after the appearance of the disease in Manila by a vessel that had been permitted to load in quarantine and sail to Nueva Caceres without the five days' detention. It was afterwards ascertained that some of the crew had communicated with the shore in Manila, one of whom acquired the infection during the visit and developed the disease after the vessel arrived at Nueva Caceres.

The following circular letters were sent to the agents of vessels and still remain in force:

[Circular letter.]

OFFICE CHIEF QUARANTINE OFFICER FOR THE PHILIPPINE ISLANDS,
MARINE-HOSPITAL SERVICE,
Manila, P. I., March 22, 1902.

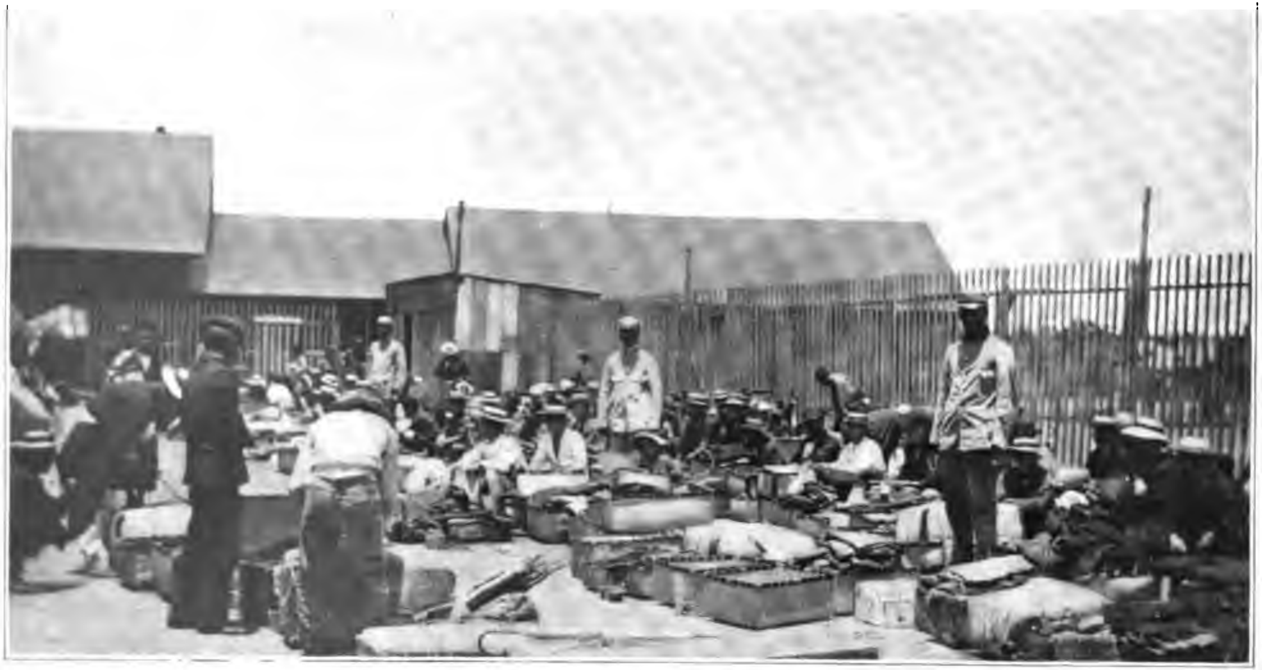
To owners and agents of vessels, Manila, P. I.

SIRS: In view of the fact that six suspected cases of cholera have occurred in Manila during the past two days, and in order to prevent the disease being carried to other ports in the Philippine Islands, I have to inform you that all vessels sailing from Manila for other island ports must comply with the following regulations before a bill of health will be granted:

(1) The vessel must be thoroughly cleaned, cabins and forecastles must be repainted if necessary, and all cockroaches and vermin killed.

(2) All water taken on board for the use of passengers and crew must be boiled.

(3) All passengers and crew must have a certificate from the board of health.



SEARCHING BAGGAGE FOR FOOD STUFFS FROM INFECTED PORTS, HONOLULU QUARANTINE STATION.

(4) All food products, vegetables especially, taken as cargo or for consumption on board must be accompanied with a certificate from the board of health.

(5) All passengers or crew taken sick during the voyage with cramps or diarrhea must be separated from other persons and not allowed to use the water-closet of the ship. All matter passed by such sick persons must be in urinal and 5 per cent solution of carbolic acid added in quantity equal to the discharge and kept three hours before throwing overboard. All clothing and bedding soiled by those sick must be immediately boiled.

(6) All vessels will anchor in the bay and wait for inspection before bill of health is granted.

(7) Captains of ships must keep vessels clean during voyage, and any boat arriving in dirty condition will be sent to Mariveles for disinfection.

(8) This order will go into effect immediately and continue in force until further notice.

Respectfully,

J. C. Perry,
Passed Assistant Surgeon, U. S. Marine-Hospital Service,
Chief Quarantine Officer for the Philippine Islands.

[Circular letter.]

Office Chief Quarantine Officer for the Philippine Islands,
Marine-Hospital Service,
Manila, P. I., March 23, 1902.

To the owners and agents of vessels, Manila, P. I.

Sirs: You are hereby informed that all vessels leaving Manila for other ports in the Philippine Islands will be quarantined for five days before being allowed to sail, and the following rules, in addition to those already promulgated, will be enforced:

All the provisions of previous order of the 22d will be rigidly enforced except clause No. 3, and the following regulations must be obeyed:

(1) All vessels, after loading cargo and with passengers and crew on board, must proceed into the bay and anchor far over to the right of the usual anchorage for incoming vessels.

(2) Must keep ladder raised and fly yellow flag continuously.

(3) No one can leave or visit the ship except the quarantine officer.

(4) Any violation of the regulations will be met with summary prosecution of the guilty party, and the penalty of fine and imprisonment will be inflicted.

(5) In case of emergency and the necessity of supplying additional water and provisions, permission will be granted for communication under the direction of the quarantine officer.

(6) No communication between the different ships will be allowed under any circumstances, and violations of this regulation will make it necessary to detain the vessels an additional five days in addition to inflicting the penalty on the guilty parties.

This order will go into effect immediately.

Respectfully,

J. C. Perry,
Passed Assistant Surgeon, U. S. Marine-Hospital Service,
Chief Quarantine Officer for the Philippine Islands.

On April 2 the regulations governing the quarantine of vessels from Hongkong was modified as specified below.

[Circular letter.]

Office Chief Quarantine Officer for the Philippine Islands,
Marine-Hospital Service,
Manila, P. I., April 2, 1902.

The Steamship Agents, Manila, P. I.

Sirs: Relative to the quarantine of vessels, and in order to delay the ships as little as possible, I have the honor to inform you that if the following regulations are rigidly enforced in Hongkong, under the supervision and to the satisfaction of Asst. Surg. J. W. Kerr, United States Marine-Hospital Service, the five days' quarantine which is imposed upon vessels arriving from Hongkong can date from the hour of departure.

(1) No Asiatic steerage passengers must be brought. Asiatic cabin passengers must be certified to by Assistant Surgeon Kerr.

(2) The crew of the vessel must be kept on board while the boat is lying in Hongkong Harbor and not allowed to go on shore. Chinese foods for the crew must be removed or destroyed before sailing and fresh food that can be certified to by Doctor Kerr provided.

(3) The water in tanks for drinking purposes must be boiled; this can be done by a jet of steam conducted from the boiler.

(4) The crew must be disinfected as usual.

(5) The forecastles and decks must be washed down with bichloride solution after being mechanically cleaned.

If, however, sickness of a suspicious character develops enroute these regulations will not apply.

All vessels will call at Mariveles to complete the five days' quarantine.

Respectfully,

J. C. Perry,
Passed Assistant Surgeon, U. S. Marine-Hospital Service,
Chief Quarantine Officer for the Philippine Islands.

On April 29 the quarantine at Manila of vessels arriving from Hongkong was removed under the conditions embraced in the letter embodied herein, since Manila was far more seriously infected with cholera than Hongkong, and the quarantine was a hardship without being of value, as only cabin passengers were landed here, who in all probability would not convey infection.

[Circular letter.]

Office Chief Quarantine Officer for the Philippine Islands,
Marine-Hospital Service,
Manila, P. I., April 29, 1902.

The steamship agents, Manila, P. I.

Sirs: I have the honor to inform you that owing to the continued prevalence of cholera in Manila and the improved conditions in Hongkong the quarantine at this port against vessels sailing from Hongkong will be raised on and after May 1, but this does not apply to vessels arriving at other ports of entry in the Philippine Islands, the existing regulations remaining in force at the latter places on account of their remaining free from cholera.

The regulations now in force at Hongkong, promulgated by circular letter of April 2, 1902, must be strictly enforced, and vessels must call as usual at Mariveles for examination and redisinfection.

Vessels from Amoy bringing steerage passengers will be subject to five days' quarantine at Mariveles after disinfection.

However, this raising of quartine is provisional, and if the disease disappears from Manila, while Canton and Hongkong remain infected, the quarantine will be reimposed in order to protect this port.

The regulations relative to food products and prohibited articles of merchandise remain effective.

Respectfully,

J. C. Perry,
Passed Assistant Surgeon, U. S. Marine-Hospital Service,
Chief Quarantine Officer for the Philippine Islands.

During the first two weeks in May ships brought steerage passengers from Amoy, although I had suggested the inadvisability of doing so. These vessels, of course, were subject to a quarantine of five days after disinfection in order to eliminate the possibility of cholera breaking out among these passengers, plague not having been reported as present in Amoy. A week later a ship arrived without steerage passengers, but had had a death among the crew from plague, and a few days later another ship arrived with a well-developed case of plague among the few Chinese steerage passengers, which was followed by the occurrence of the second case in a few days. This led to the promulgation of the regulations submitted below:

[Circular letter.]

Office Chief Quarantine Officer for the Philippine Islands,
Marine-Hospital Service,
Manila, P. I., May 29, 1902.

The Steamship Agents, Manila, P. I.

Sirs: In view of the fact that both cholera and plague exist in Amoy I have to inform you that vessels bringing Asiatic passengers from that port will be subject to fifteen days, quarantine at Mariveles in order to protect this port from the introduction of bubonic plague.

This office does not deem it wise for this class of passengers to be brought during the next few months, and this opinion has been substantiated by the arrival of the steamship *Sung Kiang* with one case of plague among the Asiatic steerage passengers.

If vessels continue to bring this class of passengers from Amoy, it will be necessary to quarantine the entire personnel of the ship at Mariveles for a period of fifteen days. However, the vessel could be released under a new crew and allowed to proceed to Manila if this should be desired.

Respectfully,
J. C. PERRY,
Passed Assistant Surgeon, U. S. Marine-Hospital Service,
Chief Quarantine Officer for the Philippine Islands.

Manila has been practically free from plague since the subsidence of the epidemic in the fall of 1901, and a fresh importation has been prevented by the rigid maritime quarantine imposed.

The work accomplished and the disbursements made are submitted in tabulated form; and while some of the figures may seem large, still the work has actually been performed, and I believe a study of the data will establish the fact that Manila has risen to a station of the first importance, and that the quarantine work of the Marine-Hospital Service in the Philippine Islands will compare favorably with that executed at the largest ports in the United States or Cuba.

Statistics of quarantine transactions at the port of Manila, P. I., for the period from September 16, 1901, to June 30, 1902.

Month.	Vessels inspected from—		Vessels in quarantine.	Vessels disinfected.	Bills of health issued.	Pieces baggage disinfected.	Pieces inspected and passed.
	Foreign ports.	Domestic ports.					
1901.							
September 16–30	26	111	1	1	151	880	2,775
October	58	180	5	5	233	7,194	2,299
November	44	225	4	4	283	4,551	769
December	58	223	1	20	276	5,405	1,525
1902.							
January	60	189	4	80	256	7,035	1,916
February	50	224	2	21	272	5,828	1,961
March	64	251	21	25	295	3,142	5,969
April	58	204	35	89	226	2,921	842
May	53	199	36	39	242	4,614	104
June	61	173	25	27	223	8,496	214
Total	532	1,979	134	261	2,457	50,066	18,374

Month.	Crew inspected.	Passengers inspected.		Persons vaccinated.		Persons bathed and effects disinfected.	Persons quarantined (suspects).
		Cabin.	Steerage.	Crew.	Passengers.		
1901.							
September 16–30	5,704	680	3,137	118	336	....	58
October	10,023	1,486	11,647	40	8	3,019	61
November	9,877	1,293	8,035	....	....	1,071	2
December	10,973	1,254	8,292	....	....	477	1
1902.							
January	9,591	1,144	7,634	990	711	2,933	3
February	9,174	1,008	6,963	537	279	1,001	7
March	12,134	1,628	13,475	241	84	4,521	262
April	10,359	1,578	9,486	166	42	4,734	3,274
May	10,948	1,778	12,179	12	8	4,929	3,582
June	10,201	1,777	12,487	30	12	6,737	4,917
Total	98,984	13,626	93,335	2,134	1,480	29,422	12,157

Outgoing quarantine transactions at the port of Manila, P. I., for the period from September 16, 1901, to June 30, 1902.

Month.	Vessels inspected.	Vessels in quarantine.	Vessels disinfected.	Vessels remanded to Mariveles.	Ferryboats inspected.	Pieces baggage disinfected.
1901.						
September 16-30	120				177	663
October						
November						
December						
1902.						
January						
February						
March	88	88	11	2		10,5
April	188	188	82	10		8,1
May	231	231	17	13		10,0
June	165	165	10	6		17,6
Total	792	672	120	31	177	47,1

Month.	Pieces baggage inspected and passed.	Crew (outgoing) inspected.	Crew quarantined.	Crew ferryboats inspected.	Passengers (outgoing) inspected.	Ferryboat passengers inspected.
1901.						
September 16-30		3,018		2,562	1,728	17,2
October						
November						
December						
1902.						
January						
February						
March	6,009	12,707	3,808		18,417	
April	2,924	36,743	9,122		52,998	
May	5,330	29,612	7,610		69,080	
June	4,437	21,709	5,543		60,901	
Total	18,700	103,789	26,083	2,562	203,124	17,2

Month.	Passengers quarantined.		Persons vaccinated.	Persons bathed and clothing disinfected.	Persons rejected.		Cases quarantinable diseases among persons in quarantine.		
	Cabin.	Steerage.			Plague suspects.	Fever.	Leprosy.	Smallpox.	Cholera.
1901.									
September 16-30									
October									
November									
December									
1902.									
January									
February									
March	357	6,380	102	66				1	
April	2,926	12,662	84	180			2	3	1
May	4,539	17,383	16	204					1
June	4,530	15,485	22	46					1
Total	12,352	51,910	224	496			2	4	4

Summary of quarantine transactions at Manila, P. I., for the period from September 16, 1901, to June 30, 1902.

Total vessels inspected	3,480
Total vessels held in quarantine	806
Total vessels disinfected	381
Total bills of health issued	2,457
Total pieces of baggage disinfected	97,221
Total pieces of baggage inspected and passed	37,074
Total cases of quarantinable diseases occurring on vessels quarantined prior to sailing:	
Cholera	43
Smallpox	4
Leprosy	2
Total crew in quarantine	26,083
Total passengers in quarantine	64,262
Total crew inspected	205,335
Total passengers inspected	327,370
Total persons vaccinated	3,838
Total persons bathed and effects disinfected	29,918
Total suspects and contacts in quarantine at Mariveles Quarantine Station	12,157

Statistics of quarantine transactions at the port of Manila, P. I., for the fiscal year ended June 30, 1902.

Month.	Vessels inspected from—		Vessels in quarantine.	Vessels disinfected.	Bills of health issued.	Pieces baggage disinfected.	Pieces inspected and passed.
	Foreign ports.	Domestic ports.					
1901.							
July	56	201	1	1	282	3,471	5,167
August	52	173	....	....	212	4,287	2,416
September	43	199	1	1	268	3,361	3,947
October	58	180	5	5	233	7,194	2,299
November	44	225	4	4	283	4,551	769
December	58	223	1	20	276	5,405	1,525
1902.							
January	60	189	4	80	256	7,035	1,916
February	50	224	2	21	272	5,828	1,961
March	64	251	21	25	295	3,142	5,969
April	58	204	35	39	226	2,921	842
May	53	199	36	39	242	4,614	104
June	61	173	25	27	223	8,496	214
Total	657	2,441	135	262	3,068	60,305	27,129

Month.	Crew inspected.	Passengers inspected.		Persons vaccinated.		Persons bathed and effects disinfected.	Persons quarantined (suspects.).
		Cabin.	Steerage.	Crew.	Passengers.		
1901.							
July	9,634	1,144	7,772	54	1,589	....	....
August	9,601	1,791	6,017	23	963	....	1
September	9,496	1,466	4,281	130	697	58	58
October	10,023	1,486	11,647	40	8	3,019	51
November	9,877	1,293	8,035	....	....	1,071	2
December	10,973	1,254	8,292	....	....	477	1
1902.							
January	9,591	1,144	7,634	990	711	2,933	3
February	9,174	1,008	6,963	537	279	1,001	7
March	12,134	1,628	13,475	241	84	4,521	262
April	10,359	1,578	9,486	166	42	4,734	3,274
May	10,948	1,778	12,179	12	8	4,929	3,582
June	10,201	1,777	12,487	30	12	6,737	4,917
Total	122,011	17,347	108,268	2,223	4,393	29,480	12,158

Outgoing quarantine transactions at the port of Manila, P. I., for the fiscal year ended June 30, 1902.

Month.	Vessels inspected.	Vessels in quarantine.	Vessels disinfected.	Vessels remanded to Mariveles.	Ferryboats inspected.	Pieces baggage disinfected.
1901.						
July	223				338	1,575
August	164				366	1,700
September	218				354	1,341
October						
November						
December						
1902.						
January						
February						
March	88	88	11	2		10,[illegible]
April	188	188	82	10		8,[illegible]
May	231	231	17	13		10,[illegible]
June	165	165	10	6		17,[illegible]
Total	1,277	672	120	31	1,058	50,[illegible]

Month.	Pieces baggage inspected and passed.	Crew (outgoing) inspected.	Crew quarantined.	Crew (ferryboats) inspected.	Passengers (outgoing) inspected.	Ferryboat passengers inspected.
1901.						
July		5,448		3,510	8,867	31,625
August		5,707		4,001	3,697	30,[illegible]
September		5,664		4,599	3,976	31,943
October						
November						
December						
1902.						
January						
February						
March	6,009	12,707	3,808		18,417	
April	2,924	36,743	9,122		52,998	
May	5,330	29,612	7,610		69,080	
June	4,437	21,709	5,543		60,901	
Total	18,700	117,590	26,083	12,110	212,936	93,[illegible]

Month.	Passengers quarantined.		Persons vaccinated.	Persons bathed and clothing disinfected.	Persons rejected.		Cases quarantinable diseases among persons in quarantine.		
	Cabin.	Steerage.			Plague suspects.	Fever.	Leprosy.	Small-pox.	Cholera.
1901.									
July					2	6			
August					1	2			
September						1			
October									
November									
December									
1902.									
January									
February									
March	357	6,380	102	66				1	
April	2,926	12,662	84	180			2	3	18
May	4,539	17,383	16	204					15
June	4,530	15,485	22	46					10
Total	12,352	51,910	224	496	3	9	2	4	43

Summary of quarantine transactions at Manila, P. I., during the fiscal year ended June 30, 1902.

Total vessels inspected	5,433
Total vessels held in quarantine	807
Total vessels disinfected	382
Total bills of health issued	3,068
Total pieces of baggage disinfected	110,713
Total pieces of baggage inspected and passed	45,809
Total cases of quarantinable diseases occurring on vessels quarantined prior to sailing:	
Cholera	43
Smallpox	4
Leprosy	2
Total persons desiring to sail, rejected, causes:	
Plague suspects	3
Fever	9
Total crew in quarantine	26,083
Total passengers in quarantine	64,262
Total crew inspected	251,711
Total passengers inspected	432,335
Total persons vaccinated	6,840
Total persons bathed and effects disinfected	29,976
Total suspects and contacts in quarantine at Mariveles quarantine station	12,158

CEBU.

Statistics of quarantine transactions at the port of Cebu, P. I., for the period from September 16, 1901, to June 30, 1902.

Month.	Vessels inspected from—		Vessels in quarantine.	Vessels disinfected.	Bills of health issued.	Pieces baggage disinfected.	Bags mail disinfected.
	Foreign ports.	Domestic ports.					
1901.							
September 16-30	1	50			2		
October	3	92			5		
November	2	71			2		
December	3	52			3		
1902.							
January	4	75	1	1	5		
February	3	67			2		
March	5	69			5	68	
April	6	70	1	1	19		103
May	8	97			39		
June	10	93	1	1	48	34	
Total	45	736	3	3	130	102	103

Month.	Crew inspected.	Passengers inspected.		Persons held in quarantine.	Persons bathed and effects disinfected.	Crew and passengers vaccinated.	Packages freight refused landing.
		Cabin.	Steerage.				
1901.							
September 16-30	1,616	105	924				
October	2,759	86	611				
November	2,316	121	821				
December	2,469	210	916				
1902.							
January	3,196	255	877				
February	2,943	173	1,468				
March	3,657	200	1,278				
April	2,701	180	924	202	333	32	6
May	3,775	303	2,421			2,285	
June	2,680	185	984	28	28	1,173	
Total	28,112	1,818	11,254	230	361	3,490	6

Statistics of quarantine transactions at the port of Cebu, P. I., for the fiscal year ended June 30, 1902.

Month.	Vessels inspected from—		Vessels in quarantine.	Vessels disinfected.	Bills of health issued.	Pieces baggage disinfected.	Bags mail disinfected.
	Foreign ports.	Domestic ports.					
1901.							
July	4	78			3		
August	2	83			4		
September	2	88			3		
October	3	92			5		
November	2	71			2		
December	3	52			3		
1902.							
January	4	75	1	1	5		
February	3	67			2		
March	5	69			5	68	
April	6	70	1	1	19		1
May	8	97			39		
June	10	93	1	1	48	34	
Total	52	935	3	3	138	102	1

Month.	Crew inspected.	Passengers inspected.		Persons held in quarantine.	Persons bathed and effects disinfected.	Crew and passengers vaccinated.	Packages freight refused landing.
		Cabin.	Steerage.				
1901.							
July	2,447	179	814				
August	2,438	118	712				
September	2,674	141	1,164				
October	2,759	86	611				
November	2,316	121	821				
December	2,469	210	946				
1902.							
January	3,196	255	877				
February	2,943	173	1,468				
March	3,657	200	1,278				
April	2,701	180	924	202	333	32	6
May	3,775	303	2,421			2,285	
June	2,680	185	984	28	28	1,173	
Total	34,055	2,151	13,020	230	361	3,490	6

ILOILO.

Statistics of quarantine transactions at the port of Iloilo, P. I., for the period from September 16, 1901, to June 30, 1902.

Month.	Vessels inspected from—		Crew inspected	Passengers inspected.		Bills of health issued.	Crew and passengers vaccinated
	Foreign ports.	Domestic ports.		Cabin.	Steerage.		
1901.							
September 16–30	2	19	1,255	208	2,070	2	
October	2	22	1,119	176	407	3	
November	3	27	1,175	171	431	2	
December	8	36	1,823	314	304	4	
1902.							
January	4	32	1,195	254	635	5	
February	7	22	1,577	146	754	3	
March	8	23	1,455	384	463	10	
April	4	25	820	310	244	4	9
May	6	41	1,655	317	1,472	7	
June	9	22	1,211	261	767	12	
Total	53	269	13,285	2,571	7,547	52	9

Statistics of quarantine transactions at the port of Iloilo, P. I., for the fiscal year ended June 30, 1902.

Month.	Vessels inspected from—		Crew inspected.	Passengers inspected.		Bills of health issued.	Crew and passengers vaccinated.
	Foreign ports.	Domestic ports.		Cabin.	Steerage.		
1901.							
July	8	30	1,213	80	204	9	....
August	....	21	892	120	473	5	....
September	2	29	1,651	282	2,401	3	....
October	2	22	1,119	176	407	3	....
November	3	27	1,175	171	431	2	....
December	8	36	1,823	314	304	4	....
1902.							
January	4	32	1,195	254	635	5	....
February	7	22	1,577	146	754	3	....
March	8	23	1,455	384	463	10	....
April	4	25	820	310	244	4	98
May	6	41	1,655	347	1,472	7	....
June	9	22	1,211	261	767	12	....
Total	61	330	15,786	2,845	8,555	67	98

Financial statement, United States currency basis.

APPROPRIATIONS.

Act 163, United States Philippine Commission, quarantine service	$73,435.50
Act 264, United States Philippine Commission, quarantine service	52,500.00
Act 311, United States Philippine Commission, quarantine service	664.00
Act 330, United States Philippine Commission, quarantine service	24,400.00
Act 389, United States Philippine Commission, quarantine service	23,250.00
Total appropriated for the quarantine service	174,249.50

Statement of receipts and disbursements for the United States quarantine service for the Philippine Islands during the fiscal year ended June 30, 1902.

DEBITS.

1901.		
July 16.	Received of treasurer Philippine Islands	$10,325.00
Aug. 10.	Received of treasurer Philippine Islands	10,000.00
Sept. 13.	Received of treasurer Philippine Islands	15,600.00
Oct. 25.	Received of treasurer Philippine Islands	18,000.00
Nov. 21.	Received of treasurer Philippine Islands	4,600.00
Dec. 20.	Received of treasurer Philippine Islands	10,400.00
1902.		
Jan. 17.	Received of treasurer Philippine Islands	17,500.00
Feb. 19.	Received of treasurer Philippine Islands	25,000.00
Mar. 6.	Received of "Evie J. Ray"	13.80
Mar. 22.	Received of treasurer Philippine Islands	17,700.00
Apr. 24.	Received of treasurer Philippine Islands	6,600.00
May 27.	Received of treasurer Philippine Islands	6,000.00
June 19.	Received of treasurer Philippine Islands	4,200.00
June 30.	Received refund for subsistence	83.50
June 30.	Received of Yuchausti y Ca. (subsistence casco crews)	4.92
	Total cash receipts	146,027.22
1901.		
Dec. 30.	Refund to treasurer, unexpended balance act 163	5,360.00
1902.		
Mar. 6.	Refund to treasurer, collection act 330	13.80
Mar. 22.	Refund to treasurer, unexpended balance acts 163, 264	2,477.26

Apr. 1. Credit by loss in value of Mexican currency due to change in rate from 2.10 to 2.27	$465.07
Apr. 26. Refund to treasurer, unexpended balance act 264	887.40
	9,203.93
Balance to be accounted for	136,823.29
	146,027.22

CREDITS.

Disbursements:		
July, 1901—		
Salaries and wages of personnel	$1,802.10	
Launch expenses, supplies, and repairs	351.93	
Rents, new construction, and equipment	30.00	
Station supplies and disinfectants	469.10	
Office and miscellaneous expenses	327.36	
		$2,980.49
August—		
Salaries and wages of personnel	1,947.59	
Launch expenses, supplies, and repairs	354.32	
Rents, new construction, and equipment	80.00	
Station supplies and disinfectants	153.23	
Office and miscellaneous expenses	366.50	
		2,901.64
September—		
Salaries and wages of personnel	2,260.98	
Launch expenses, supplies, and repairs	134.21	
Rents, new construction, and equipment	6,055.00	
Station supplies and disinfectants	323.55	
Office and miscellaneous expenses	325.54	
		9,099.28
October—		
Salaries and wages of personnel	2,020.97	
Launch expenses, supplies, and repairs	342.29	
Rents, new construction, and equipment	2,555.00	
Station supplies and disinfectants	6,611.40	
Office and miscellaneous expenses	1,432.76	
		12,962.42
November—		
Salaries and wages of personnel	1,629.37	
Launch expenses, supplies, and repairs	1,344.52	
Rents, new construction, and equipment	2,055.00	
Station supplies and disinfectants	1,208.22	
Office and miscellaneous expenses	484.05	
		6,721.16
December—		
Salaries and wages of personnel	2,908.13	
Launch expenses, supplies, and repairs	490.64	
Rents, new construction, and equipment	7,240.00	
Station supplies and disinfectants	2,745.31	
Office and miscellaneous expenses	417.15	
		13,801.23
January, 1902—		
Salaries and wages of personnel	1,971.23	
Launch expenses, supplies, and repairs	1,083.39	
Rents, new construction, and equipment	5,923.57	
Station supplies and disinfectants	187.69	
Office and miscellaneous expenses	314.53	
		9,480.41
February—		
Salaries and wages of personnel	2,359.48	
Launch expenses, supplies, and repairs	347.62	
Rents, new construction, and equipment	6,270.00	
Station supplies and disinfectants	196.36	
Office and miscellaneous expenses	514.13	
		9,687.59

DISINFECTING LOAM PACKED EGGS, HONOLULU QUARANTINE STATION.

Disbursements—Continued.

March—		
Salaries and wages of personnel	$2,262.39	
Launch expenses, supplies, and repairs	414.45	
Rents, new construction, and equipment	24,084.03	
Station supplies and disinfectants	323.21	
Office and miscellaneous expenses	329.40	
		$27,413.48
April—		
Salaries and wages of personnel	999.51	
Launch expenses, supplies, and repairs	417.83	
Rents, new construction, and equipment	8,670.51	
Station supplies and disinfectants	1,338.88	
Office and miscellaneous expenses	188.67	
		11,615.40
May—		
Salaries and wages of personnel	2,413.98	
Launch expenses, supplies, and repairs	460.91	
Rents, new construction, and equipment	332.99	
Station supplies and disinfectants	420.92	
Office and miscellaneous expenses	705.68	
		4,334.48
June—		
Salaries and wages of personnel	4,317.65	
Launch expenses, supplies, and repairs	892.97	
Rents, new construction, and equipment	8,832.10	
Station supplies and disinfectants	598.59	
Office and miscellaneous expenses	754.04	
		15,395.35
Total disbursements		126,392.93
Balance Hongkong and Shanghai Bank		10,430.36
Grand total		136,823.29

Expenditures for the quarantine service for the Philippine Islands during the fiscal year ended June 30, 1902.

DETAILS.

Compensation of personnel	$26,893.38
Stationery, blanks, and printing	245.93
Incidental expenses, general service	6,132.10
Launch supplies and repairs to launches	6,635.08
Station supplies, including disinfectants	7,669.26
New construction and station equipment	78,817.18
Total expenditures	126,392.93

EXPENDITURES BY STATION.

Manila:		
General service expenses	$13,424.81	
Launch expenses	7,247.84	
		$20,672.65
Mariveles:		
General expenses and supplies	15,983.98	
New construction and equipment	47,271.44	
		63,255.42
Cebú:		
General service expenses	2,860.40	
Launch expenses	2,672.18	
Station equipment	15,120.97	
		20,653.55

Iloilo:		
General service expenses	$3,081.09	
Launch expenses	2,425.96	
Station equipment	16,304.26	
		$21,811.31
Total expenditures		126,392.9

Respectfully submitted.

J. C. Perry,
P. Asst. Surg., U. S. Public Health and Marine-Hospital Service,
Chief Quarantine Officer for the Philippine Islands.

The Surgeon General, Public Health and Marine-Hospital Service.

QUARANTINE MEASURES ENFORCED ON ARMY TRANSPORTS AT MANILA.

On May 21 a cable message was received from Passed Assistant Surgeon Perry stating that he was detaining army transports before sailing, and that his authority for detaining them had been called in question.

Doctor Perry's report showed that his disinfection and detention of outgoing boats had been effective in preventing the development of cholera on any vessel after clearing, and no port had become infected through vessels since the quarantine was established. Twenty-three vessels had cholera develop on board while in their five days' detention, which alone shows how valuable is this precaution.

The value of precautionary measures taken at a port infected with cholera with regard to vessels leaving for the United States was demonstrated in 1893 at Naples, where cholera was epidemic. Three vessels during that season left for the United States, the *Masilia*, *Weser*, and *Cashmere*, and all were made to conform to the United States quarantine regulations. They all arrived at the port of New York with no cholera en route or at time of arrival. During the same period 4 vessels with the same class of passengers, and their places of origin similar, in many cases identical, the water and food supply being the same as on the vessels for the United States, left for South America, and all were turned back by the South American authorities and returned to Naples. One, the *Vincenzia Floria*, had about 5 deaths; the *Andrea Gloria*, 90 on the way out; total not ascertained: another, 84 deaths, and the fourth, 230 deaths, from cholera.

The following correspondence shows the action by the Department and the support of the Treasury quarantine regulations given by the War Department. Appended also is the correspondence at Manila concerning the same matter:

Treasury Department, *Washington, May 24, 1902.*

Sir: I have the honor to inform you that the Surgeon-General of the Marine-Hospital Service has received from P. A. Surg. J. C. Perry, chief quarantine officer of the Philippine Islands, a telegram bearing date of May 21, 1902, reporting that he is detaining the United States army transports in quarantine at Manila for five days before sailing; that two vessels have developed cholera on board, and that General Chaffee questions his authority to hold the vessels.

I would invite your attention to an act granting additional quarantine powers and imposing additional duties upon the Marine Hospital Service, approved February 1, 1893, copy of which is transmitted herewith; also to paragraph 9, Article V, of the quarantine regulations to be observed at foreign ports, which reads:

"Should cholera break out in the barracks or houses in which the passengers are undergoing the five days' observation, no passenger from said houses or barracks should embark until five days' isolation from the last case and a repetition of the sanitary measures previously taken."

Paragraph 3, Article I, of the same regulations is as follows:

"Vessels clearing from a foreign port for any port in the United States and entering or calling at intermediate ports must procure at all such ports the supplemental bill of health, signed as provided in Article I. If a quarantinable disease has appeared on board the vessel after leaving the original port of departure or other circumstances presumably render the vessel infected, the supplemental bill of health should be withheld until such sanitary measures have been taken as are necessary."

The detention of five days after the last case of cholera, this being the period of incubation of the disease, is absolutely essential to give assurance that there will be no outbreak of cholera on board the vessels at sea.

By Executive order dated January 3, 1900, an act granting additional quarantine powers and imposing additional duties upon the Marine-Hospital Service and all rules and regulations theretofore or thereafter prescribed by the Secretary of the Treasury under that act were given full force and effect in the Philippine Islands in so far as they were applicable, and the examination in ports of said islands of incoming and outgoing vessels and the necessary surveillance over their sanitary condition, as well as of cargo, passengers, crew, and of all personal effects, was vested in and was directed to be conducted by the Marine-Hospital Service.

I would therefore request that General Chaffee be informed by cable that the quarantine regulations of the Treasury Department are to be enforced at Manila.

Respectfully,

O. L. SPAULDING,
Acting Secretary.

The SECRETARY OF WAR.

WAR DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, May 27, 1902.

SIR: In the matter of your letter of May 24, concerning the administration of the Marine-Hospital Service in the Philippine Islands, from which it appears that the commanding general Division of the Philippines questions the authority of the quarantine officers of the Treasury to detain the army transports in quarantine during the prevalence of cholera in the islands, and in which you request that General Chaffee be informed, by cable, that the quarantine regulations of the Treasury Department are to be enforced at Manila, I have the honor to inform you that, in compliance with your request, a cable dispatch has been sent to General Chaffee (a copy of which is herewith inclosed), which, no doubt, will be entirely satisfactory to your Department.

Very respectfully,

ELIHU ROOT,
Secretary of War.

The SECRETARY OF THE TREASURY.

[Cablegram.]

WAR DEPARTMENT, ADJUTANT-GENERAL'S OFFICE,
Washington, May 26, 1902.

CHAFFEE, *Manila:*

At the request of the Secretary of the Treasury, you are advised Treasury quarantine regulations are applicable to army transports under Executive orders, January 3, 1900.

CORBIN.

CORRESPONDENCE AT MANILA RELATIVE TO THE NECESSITY FOR QUARANTINING UNITED STATES ARMY TRANSPORTS.

OFFICE CHIEF QUARANTINE OFFICER FOR THE PHILIPPINE ISLANDS,
PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
Manila, P. I., July 7, 1902.

SIR: I have the honor to transmit herewith, for your information, copies of correspondence relative to the necessity for quarantining United States army transports before allowing them to sail for United States ports.

This is a copy of the letter of the commissioner of public health to which reference has already been made, and which was responsible for the action of the division commander. The matter of quarantining transports was settled in one day, and the question has not since been raised.

Respectfully,

J. C. PERRY,
P. A. Surg., U. S. Public Health and Marine-Hospital Service,
Chief Quarantine Officer for the Philippine Islands.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

DEPARTMENT OF THE INTERIOR,
BUREAU OF PUBLIC HEALTH FOR PHILIPPINES,
OFFICE OF THE COMMISSIONER,
Manila, May 20, 1902.

SIR: I have the honor to state that in my opinion the quarantine of five days imposed on transports leaving Manila for the United States is unnecessary. Experience has proven during the present epidemic of cholera in Manila that out of the thousands of contacts sent to our detention camps but very few have ever contracted the disease, and they unquestionably had the infection in their systems when sent to such camps. There can be no doubt at all but that the infection of cholera is only transmitted through the alimentary canal by means of infected food or drink, and for this reason, should one or two cases occur after the vessel left the port of Manila, there could be no danger of the general infection of the ship, provided ordinary means were taken to protect the water and food.

The danger arising from the transfer of troops from this port to the United States without the five days' detention would be practically nil, for the reason that in case the disease developed aboard the ship it would in all probability do so within five days from the date of departure. In case, however, that transports sail via Nagasaki, I would recommend that they be required to remain forty-eight hours in detention in the Bay of Manila before starting, for the reason that the trip to that point does not consume, as a rule, more than five days, and the forty-eight hours imposed in Manila Bay would be sufficient time to eliminate any possibility of the disease breaking out after arrival at the port of Nagasaki.

Very respectfully,

L. M. MAUS,
Commissioner of Public Health.

The ADJUTANT-GENERAL DIVISION OF THE PHILIPPINES.

[First indorsement.]

HEADQUARTERS DIVISION OF THE PHILIPPINES,
Manila, P. I., May 21, 1902.

To the chief surgeon for remark.

[Second indorsement.]

HEADQUARTERS DIVISION OF THE PHILIPPINES,
CHIEF SURGEON'S OFFICE,
Manila, P. I., May 21, 1902.

Respectfully returned to the adjutant-general of the division, recommending reference to the chief quarantine officer, Manila, P. I., for remark, he being the official assigned to duty in Manila by the Administration for this particular character of work.

C. L. HEIZMANN,
Lieutenant-Colonel, Deputy Surgeon-General, U. S. Army, Chief Surgeon.

[Third indorsement.]

HEADQUARTERS DIVISION OF THE PHILIPPINES,
Manila, P. I., May 25, 1902.

Respectfully referred to the chief quarantine officer, Manila, P. I., requesting remark.

By command of Major-General Chaffee:

J. T. KERR,
Assistant Adjutant-General.

[Fourth indorsement.]

OFFICE CHIEF QUARANTINE OFFICER FOR THE PHILIPPINE ISLANDS,
Manila, P. I., June 7, 1902.

Respectfully returned to the adjutant-general Division of the Philippines with the following statement relative to this communication:

As the commissioner of public health for the Philippines occupies a civil position and has no jurisdiction whatever over the maritime quarantine in the Philippine Islands, his recommendations on the subject have no official significance, but since his letter criticises the work of another and independent service it may be pertinent to determine whether his recommendations are based on scientific data and are borne out by established facts.

The statement is made that the quarantine of five days imposed on transports leaving Manila for the United States is unnecessary, this being based on the fact that few persons "contract" cholera in detention camps. This may be true in some instances, but a comparison must not be drawn between a properly conducted camp and a crowded troopship, since in the former the suspects are segregated in small groups, and if some develop the disease from the infection already acquired only those in that group are exposed. The same can not be accomplished on a crowded troopship; no segregation of suspects can be effected. In fact, on most transports no adequate provision has ever been made for the proper isolation of those sick with infectious and contagious diseases.

Relative to this matter I will respectfully state that the necessity for quarantining the personnel of ship from cholera-infected ports before allowing the vessel to sail is not only necessary, but of extreme importance, not only for the protection of those on board, but also in order to guard against the introduction of the disease into other ports.

There is no question but that many of the soldiers and casuals sailing on transports have been exposed to infection, and in all probability some of them have contracted it prior to embarkation. Now, assuming the latter, which has been demonstrated by the occurrence of cases of cholera on three transports out of seven (counting the *Hancock* twice), is it not a rational and wise procedure to detain such vessels at a place where they and their passengers can be promptly disinfected, the latter removed and segregated in groups, in order that only a small number would be exposed to secondary cases that might develop, and so that the ship can sail in a clean condition, no longer a menace to her personnel or the ports she may visit?

The commissioner of public health also states that "should one or two cases occur after the vessel left the port of Manila there could be no danger of general infection to the ship, provided ordinary means were taken to protect the water and food." Relative to this I will state that in my opinion the occurrence of cholera on board a crowded troopship at sea, with probably 1,500 or 2,000 persons on board, is a grave matter, and the commisioner of public health has failed to point out the real dangers in such cases—the inability to properly disinfect at sea either the compartment from which the sick were removed or those who probably infected their clothing or hands from the discharges of the patient by rendering assistance to a stricken comrade, or from the discharges soiling bedding or the floor. In fact, it would be impossible for the transport surgeons to ascertain this class or number of suspects. There may be one or many of this class of contacts, and being careless they often eat their food without previously washing, much less disinfecting their hands, thereby infecting themselves and others in this manner, each person infected becoming a center to infect others.

The above is not fancy, but facts, and when the rapidity with which cholera increases is taken into consideration, is it not reasonable to expect a serious outbreak of the disease when the above-mentioned conditions exist?

The general food and water supply of the ship is not liable to be infected, since the one is distilled and the other is kept in the storeroom, and no danger from either source exists until they are served to the individuals for consumption, when the unclean infect themselves and others.

It may be proper to determine if the argument advanced can be substantiated by facts and if the danger is real instead of theoretical, and in order to prove the statements, I will cite three instances out of many that have come under my personal observation during the present epidemic in studying the occurrence and course of the disease on 27 vessels that have had cholera on board while serving the five days' quarantine prior to sailing.

Two cases of cholera occurred among the soldiers on the transport *Warren;* the first one developed forty-two hours after the embarkation of the troops, the infection in this case being traced to food the soldier bought from a native vender and ate just prior to going on board. The man was taken sick early in the morning and was immediately isolated, the place in which he was lying was promptly disinfected as thoroughly as possible under the circumstances. The ship was immediately remanded to Mariveles, where all persons on board were bathed and their baggage and clothing disinfected, the troops being disembarked and segregated in groups in barracks on shore. On the fourth day from the first case, the second case occurred among the casual detachment in the barracks. Inquiry into his relations with the first soldier taken ill demonstrated the fact that he occupied the next bunk to him, and rendered assistance to his comrade.

On another vessel with only a small crew, the chief engineer was seized with cholera, having contracted the infection in Manila from infected food or drink, and although the food and water on board ship was the same for all, the only other person who contracted the disease was the officer who assisted the first case to his room and attended him during the attack. He changed his clothing, took a bath, and attempted disinfection of his hands, still two days later he was stricken with the disease and died. The ship and personnel had been thoroughly disinfected before the occurrence of the second case, but the latter had infected himself prior to that time by rendering assistance to his brother officer.

The third instance still more strikingly supports the contention made, the history of the vessel being briefly as follows: One case of cholera was removed from the vessel at Manila and the boat remanded to Mariveles on May 5 for thorough disinfection and detention. The food on board was destroyed and fresh supply furnished, the water from tanks discharged, tanks disinfected, and fresh supply of water furnished, personnel of ship bathed, and their clothing and beggage disinfected with steam. Vessel thoroughly disinfected. As all the barracks were occupied by passengers and crews from other vessels, the personnel of this ship could not be removed. On the 8th, two days after disinfection, and three days after the first case, another case of cholera occurred; personnel and ship redisinfected. On the 10th a third case developed, and on the 11th a fourth. After the fourth case, the barracks being available, the entire personnel of the ship were placed on shore in small segregated groups, and no further cases of cholera occurred.

What deductions can be drawn from the history of this vessel? Upon the first appearance of the attack the patient was immediately removed from the vessel to the hospital on shore in a few minutes after the onset of the illness. Still cases would continue to develop; evidently those in immediate contact with the patient became infected by either soiling the hands or the clothes with the discharges and, neglecting the ordinary precautions, infected themselves through handling their food. As soon as it was possible to segregate the personnel in small groups, thereby minimizing the danger mentioned, no more cases occurred. That disinfection of the ship was thorough and infection of the ship itself was not responsible for the additional cases is evidenced by the fact that when the crew and passengers were released and placed on board the vessel no further cases occurred.

The commissioner of public health also states that there is practically no danger in the transfer of troops from this port to the United States without the five days' detention, "for the reason that in case the disease developed aboard ship it would in all probability do so within five days from the date of departure." I fail to see any logic in reasoning that because a case develops when the ship is five days at sea that no danger exists. I think that I have shown conclusively that danger does exist; that this danger is materially increased when the disease breaks out at sea, and it is impossible to thoroughly disinfect the personnel of the ship; and an infected vessel arriving at a clean port is always a menace to the latter.

The opinion of the commissioner of public health can not be substantiated by facts, and is one that will not be accepted by any sanitarian or one conversant with the dangers of cholera infection. Furthermore, he contradicts himself in the same paragraph of his letter by recommending that transports be quarantined forty-eight hours before being allowed to sail in event they proceed via Nagasaki, "in order to eliminate any possibility of the disease breaking out after arrival at that port."

If there is no danger in transferring troops, quarantine of vessel before sailing is unnecessary, then why does he recommend a quarantine of forty-eight hours; is it to protect Nagasaki, a foreign port, or so that the vessel can be quarantined there upon arrival?

The commissioner of public health states in one paragraph that quarantine is unnecessary, and that no danger exists if the ship sails without undergoing this detention, but immediately refutes his own argument by recommending that vessels be quarantined two days. Now, quarantine is either necessary or it is not, and as both the commissioner of public health and myself agree that it is, why not quarantine the ship in accordance with regulations and specific orders and allow the vessel to sail in a safe condition, since the quarantine of forty-eight hours is of no value and the transport would be dispatched with a false security only to be quarantined in all probability at the first port of call?

J. C. Perry,
Passed Assistant Surgeon, U. S. Marine-Hospital Service,
Chief Quarantine Officer for the Philippine Islands.

JAPAN.

An officer has been on duty at the port of Yokohama and another at the port of Kobe during the fiscal year, and another has recently been assigned to the port of Nagasaki, these being three of the most important ports in the Orient. Their duties are to carry out the provisions of the quarantine act of 1893, as will be seen by the annual reports of these officers, appended hereto.

YOKOHAMA.

Report of Transactions at Yokohama, by Asst. Surg. Dunlop Moore.

Public Health and Marine-Hospital Service,
Office of Medical Officer in Command,
Yokohama, Japan, July 26, 1902.

Sir: I have the honor to submit a report of the transactions at this station from September 15, 1901, to and including June 30, 1902, as follows:

During the above period the work has been under the charge of three successive officers, viz, at first Doctor Rokkaku, later Acting Asst. Surg. J. S. Hough, and finally the present writer. As an unavoidable consequence of the changes brought about by the fatal illness of late Acting Asst. Surg. Stuart Eldridge, whose extensive and valuable labors had caused his name to become identified in a pecular manner with the office of United States sanitary inspector at Yokohama, the records of this station for the above period find themselves in a somewhat incomplete and chaotic condition. For the same reason much-needed improvements have been retarded by the lack of continuity of purpose incident to the enforced changes in personnel.

It would seem superfluous to enter into a prolix account of the equipment and methods of this station when they have been recently so exhaustively described in the "Report of inspection of Yokohama," which appeared in the Public Health Reports for January 31, 1902. It may be stated in general that, with the exception of improved bathing facilities recently provided, and some minor changes in procedure which the personal supervision of the officer in charge has secured, the disinfecting plant at this station is still justly open to criticism. Plans, however, initiated by my predecessor, Acting Assistant Surgeon Hough, have been drawn up for a complete modern disinfecting plant, and it is believed that it will be put in operation in due course of time. It need hardly be mentioned that radical changes of this nature can not be effected in Yokohama with the same facility as in the average American city. Time, patience, and much parley are required. There being no steam chamber here available the ordinary disinfection of baggage, etc., is done by means of formaldehyde gas.

The bathing facilities, as previously stated, have been improved lately and may now be regarded as fairly well adapted to the requirements of the emigrant class of Japanese, permitting segregation of the sexes as required by law. The distance of the disinfecting plant from the consulate is a distinct disadvantage, rendering personal supervision of the work on the part of the medical officer difficult, but considerable inquiry indicates that a central location can not be secured.

The office of the Service is situated in the building that was occupied as the consular prison in the "extra-territorial" days when each foreign power had jurisdiction over its own criminal subjects. Its immediate proximity to the consulate-general and moderate rent are strong points in favor of continuing the present arrangement.

The personnel of the station, as at present constituted, includes, in addition to the medical officer, one interpreter, who receives compensation when actually employed.

His duties consist in accompanying the medical officer on board of all vessels carrying Japanese emigrants, so that these may be questioned when desirable through the medium of a competent and reliable man. Hardly a day passes in which his services are not employed in interviews with shippers concerning invoices or with intending emigrants regarding their sanitary antecedents. He also regularly examines the passports with which the Japanese emigrants are provided, indicating such as apparently come from suspicious districts, and from time to time extracts data relating to quarantinable diseases from the vernacular journals. It will be apparent that his services are indispensable. An office boy, classed as laborer, has lately been employed, whose various duties are sufficiently indicated by his title.

Vessels are usually boarded by means of launches provided by the respective steamship companies concerned, and this arrangement, in my present experience, has proved satisfactory. Some steamers, instead of making fast to a buoy, take on passengers at the custom's pier when, of course, a launch is not required.

The general methods of inspection employed here do not seem to require any extended comment, being similar to those in vogue at United States quarantine stations; but a few points relating particularly to the work of this station may be touched upon. It will be apparent from the statistics tabulated below that a limited number of vessels are granted bills of health without formal inspection. This is the rule in the case of Government vessels carrying medical officers, and exceptionally inspection has been waived in the case of merchant vessels as permitted in the regulations—e. g., in the case of ships carrying oil directly from New York to this port. Since the present outbreak of cholera in Japan this exemption has been extended only to naval vessels. On the other hand, freight steamers, of which a considerable number ply between this port as an eastern terminal and New York "via ports and Suez Canal," have been regularly inspected. They usually carry a large Asiatic crew, and during both eastern and western passages touch at several infected or suspicious ports. The personnel of these vessels is likely to undergo considerable change during the course of the voyage. Steamers bound for Manila have given comparatively little trouble, as they carry but few steerage passengers.

The most important part of the work at this station arises in connection with the numerous passenger steamers which, starting from Hongkong, after touching at several Chinese and Japanese ports, ordinarily take on the bulk of their passengers at Yokohama and pass across to the Pacific coast of America, either via Honolulu to San Francisco or to Puget Sound ports via Victoria, British Columbia. Much less important from a quarantine standpoint is the traffic between this port and Portland, Oreg. The Honolulu lines, composed of 9 vessels, furnish practically a weekly service, and have recently been transporting Japanese emigrants to Hawaii at a rate approximating 400 per week. The usual procedure in the case of these vessels is as follows: Two hours before the scheduled time of sailing the sanitary inspector goes aboard, and, after the ordinary inquiries, proceeds to the examination of the entire crew. Next he passes to the Hongkong steerage passengers, who, being regarded as constituting a particularlv dangerous portion of the personnel, are carefully scrutinized, and of whom when plague prevails in that city a routine physical examination is made. Next the passengers in transit from the ports of call are gone over, and finally the Yokohama steerage passengers are examined with reference to their compliance with the quarantine and immigration laws of the United States. In times when cholera or plague exist in Japan, as at present, the inspection cards and passports of all Yokohama steerage passengers are examined for the second time on shipboard, so that no passengers from infected districts may embark without having undergone the required period of probation.

In a general way the pathological conditions to be detected in passengers from this port may be classified as follows: First, plague, cholera, and the graver quarantinable diseases when present in Japan, our main safeguard being detention of passengers whose passports show them to be from infected districts for a period covering the incubation. Second, smallpox and the minor quarantinable diseases. Smallpox is mentioned in this connection for the reason that the excellent system of vaccination enforced in Japan has robbed this disease of all its terrors. Indeed, the frequency with which one observes pock-marked faces among Japanese of a certain age and the extreme rarity of this phenomenon among those born since a thorough system of vaccination was introduced furnishes an object lesson as to the value of this procedure hardly obtainable elsewhere. Third, physical defects barring under the immigration law. It may be said, in general, that the physical condition of Japanese emigrants rarely furnishes grounds for rejection, indicating a process of selection prior to embarkation. Fourth, leprosy, which assumes importance from the fact that current reports estimate the number of victims of this disease in Japan at approximately 40,000.

With reference to vessels clearing for Seattle or Tacoma, a confusing factor enters in the impracticability of enforcing restrictions with reference to passengers bound for Victoria, British Columbia, which is regularly a port of call. It would seem that this matter could be satisfactorily arranged only by agreement with the Canadian quarantine officials.

Now, that cholera is present in Japan the question of how to deal with such articles of freight as presumably may carry infection is a very perplexing one. The shipper usually purchases the goods he handles from a Yokohama middleman, whose written statement as to the origin of the goods has heretofore been accepted as sufficient evidence on this point. It must be admitted that the value of the statements, coming from a man usually unknown to the sanitary inspector, is somewhat problematical, and really convincing proof on this point is difficult to obtain. In the matter of Chinese food products, which are sometimes transshipped at Yokohama to American ports for the purpose of evading quarantine regulations, personal examination of suspected shipments as well as inspection of the records of the Japanese custom-house might throw some light, did the other duties of the sanitary inspector permit this expenditure of time.

In this connection it may be of interest to mention that the present outbreak of cholera is believed to have been introduced into Japan by means of an actual case unrecognized at quarantine.

No vessels have been disinfected at this station during the period under consideration. I understand that previously this has been done when necessary by the Japanese quarantine officials.

Statistics for the period September 15, 1901, to June 30, 1902, are appended as follows:

Bills of health issued	206
Vessels inspected	201
Bills of health issued without inspection	5
Vessels disinfected	0
Crew inspected	15,418
Passengers inspected	[a]15,413
Passengers vaccinated	0
Pieces of baggage inspected and labeled	[a]10
Pieces of baggage disinfected and labeled	[a]10,954
Steerage passengers bathed	[a]9,632
Crew bathed	[a]122

Respectfully,

DUNLOP MOORE,
Asst. Surg., Public Health and Marine-Hospital Service.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

APPLICATION FOR ORIGINAL BILL OF HEALTH.

[Issued when Yokohama is port of departure, only.]

YOKOHAMA, ——— ———, *190—*.

CONSUL-GENERAL OF THE UNITED STATES, *Yokohama:*

Please grant bill of health, as follows:
Ship's name, ——— ———. Steamer or sailing vessel, ———.
Nationality, ———. Rig, ———.
Master's name (in full or with initials), ——— ———.
Gross tonnage, ———. Net tonnage, ———.
Iron, steel, or wood, ———. Number compartments for cargo, ———.
Number compartments for steerage passengers, ———.
Number compartments (not berths) for officers and crew, ———.
Name of surgeon, if any (in full or with initials), ——— ———.
Number of officers, ———.
Number of crew including petty officers, ———.
Number of members of officers' families, if any, ———.

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[a] For period December 9, 1901, to June 30, 1902. Statistics for period September 15 to December 8, 1901, not available.

Number of passengers, cabin, ———.
Number of passengers, steerage (include second-class), ———.
Number of persons on board, all told, ———.
Where last from, ———.
Number of cases of sickness during voyage, character of same, and whether fatal, ———.
Number of cases of sickness while in this port, character of same, and whether fatal, ———.

(NOTE.—In both above answers exclude trivial ailments such as colds and ordinary venereal.)

Vessel engaged in ——— trade, and (if on regular line) plies between ——— and ———.
Nature of cargo, ———.
Source of water supply, ———. Source of food supply, ———.
Vessel bound for ———, via ———.
When sailing, ———.

Inclosed please find 10.04 yen, consular fee for health, and ——— yen, consular fee for emigration manifest.

(NOTE.—Fee for original bill of health, 10.04 yen; for each emigration manifest sheet comprising 30 names or less, 2 yen.)

——— ———.
[To be signed by agent or captain.]

N. B.—Application for bill of health and arrangement for inspection of ship must be made twenty-four hours prior to sailing.

[Inclosure.]

REPORT OF PASSENGERS.

[Per S. S. ——— ——— Captain ——— ———.]

For ——— U. S. A., via ———; leaving ———, 190—.
From Hongkong:
  For ———: cabin, ———; E. steer., ———; N. steer., ———; total, ———.
  For ———; cabin, ———; E. steer., ———; N. steer., ———; total, ———.
From Amoy:
  For ———; cabin, ———; E. steer., ———; N. steer., ———; total, ———.
  For ———; cabin, ———; E. steer., ———; N. steer., ———; total, ———.
From Shanghai:
  For ———; cabin, ———; E. steer., ———; N. steer., ———; total, ———.
  For ———; cabin, ———; E. steer., ———; N. steer., ———; total, ———.
From Nagasaki:
  For ———; cabin, ———; E. steer., ———; N. steer., ———; total, ———.
  For ———; cabin, ———; E. steer., ———; N. steer., ———; total, ———.
From Kobe:
  For ———; cabin, ———; E. steer., ———; N. steer., ———; total, ———.
  For ———; cabin, ———; E. steer., ———; N. steer., ———; total, ———.
From Yokohama:
  For ———; cabin, ———; E. steer., ———; N. steer., ———; total, ———.
  For ———; cabin, ———; E. steer., ———; N. steer., ———; total, ———.

Grand total, cabin, ———; E. steer., ———; N. steer., ———; total, ———.

Number of passengers landed Yokohama, ———.
Sanitary condition of same, ———.
Number of crew taken on Yokohama, ———.
Sanitary condition of same, ———.
Number of crew disembarked Yokohama, ———.
Sanitary condition of same, ———.
(If passengers or crew are disembarked for sickness, state disease.)

——— ———.

[Inclosure.]

U. S. MARINE-HOSPITAL SERVICE,
Yokohama, Japan, ——— ———, *190—.*

This certifies that ——— ——— may be accepted as a ——— passenger to ——— per S. S. ——— $\left\{ \frac{\text{with}}{\text{without}} \right\}$ disinfection of baggage and subject to inspection on board ship prior to sailing.

——— ———,
Surgeon, M. H. S.

[Inclosure.]

S. S. ....

YOKOHAMA, JAPAN.

.... 190....

Inspected under U. S. regulations and found free from infection.

Not valid unless bearing consular stamp.

[Inclosure.]

YOKOHAMA.

DISINFECTION STATION FOR THE UNITED STATES.

Not valid unless bearing stamp or seal of United States sanitary inspector.

DISINFECTED.

....

KOBE.

REPORT OF TRANSACTIONS AT KOBE, BY ACTING ASST. SURG. J. B. FOWLER.

OFFICE SANITARY INSPECTOR,
PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
Kobe, Japan, September 1, 1902.

SIR: I have the honor to send in my report of the transactions at the port of Kobe, Japan, covering the period from September 15, 1901, to and including June 30, 1902.

I have officially inspected 185 vessels bound for ports in the United States and ports the possessions of the United States (as Honolulu and Manila), this being an average of over 1 every one and a half days. Of these ships 30 were under the American flag, 110 British, 39 Japanese, 5 German, and 1 Norwegian. Vessels bound to Manila, 39; San Francisco, 38; New York, 32; Seattle, 29; Tacoma, 27; Portland, 12; San Diego, 3; Puget Sound, 1; Port Angeles, 1; Royal Roads, 1; Honolulu direct, 1 United States sailing ship in ballast; Pacific coast, 1, via Hakodate.

The U. S. battle ship *New Orleans* took out a bill of health from Kobe to Yokohama; the crew numbered 358.

Two United States transports sailed from Kobe, steamship *Warren*, after docking bound for Manila, and steamship *Hancock*, bound for San Francisco, with 60 cabin and 931 soldiers in the steerage, who had been transshipped from steamship *Warren* while both were lying out in the bay. The crews of all these vessels amounted to 15,466, being an average of between 83 and 84 men per ship.

Of these vessels inspected there were 5 American, 7 British, and 2 German sailing ships, making 14 in all, and of the 171 steamships 92 carried steerage passengers.

Japanese steerage passengers embarked here in Kobe for San Francisco, 162; for Honolulu, 719; for Seattle, Tacoma, and Portland, 875; for Manila, 31; total, 1,787.

Chinese steerage passengers through from Hongkong for San Francisco and Honolulu, 3,323; for Seattle and Tacoma, 1,940; total, 5,263.

Japanese steerage passengers through from Yokohama for Manila, 8.

Chinese steerage passengers carried by Canadian Pacific Steamship Company to be transshipped at Victoria for United States, 28.

The number of steerage passengers, 7,066, added to the crews of all vessels inspected, gives a total of 22,532 persons individually examined during the period of nine and a half months.

None of the emigrants or steerage passengers were vaccinated at Kobe previous to departure, in accordance with instructions received from Washington.

All emigrants and steerage passengers whose port of departure is Kobe are also thoroughly examined by myself the day before the vessel sails. Then, on their fitness being determined, their inspection cards are collected and taken to the United States consulate and are there officially stamped and then distributed to the emigrants on board ship, where they go through the usual inspection before mentioned.

Present method of disinfection of baggage is by superheated steam and bichloride of mercury. Doctor Boyer acts as inspector of the baggage fumigation.

The number of pieces of baggage disinfected from September 15 to December 31, 1901, were 520; from January 1 to June 30, 1901, were 1,465, making a total of 1,985 for the nine and a half months.

One case of plague occurred on April 9, death resulting on April 21, the patient a man aged 25 years, being an employee of the Nippon Yusen Kaisha. No other case occurred.

Three cases of Asiatic cholera likewise occurred in Kobe in the latter half of the month of June.

The home minister gave instructions to the district governors to enforce medical inspection on passengers and cargo conveyed to the north by the Sanyo Railway Company's trains from Hiroshima, Moji, Saga, etc.

Likewise medical inspection is enforced on all vessels coming from Saga as a preventive measure against the spread of cholera, now prevalent in the Saga prefecture.

I am, sir, faithfully,

J. BUCKNILL FOWLER,
Acting Asst. Surg., Public Health and Marine-Hospital Service.

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

CHINA.

The ports in the Orient are always subject to epidemic diseases in severe form, and this year has been no exception to the general rule. For this reason an officer has been on duty at the port of Hongkong and another has been assigned to the port of Shanghai. These officers not only inspect vessels bound to the United States, but also vessels bound to the Philippine Islands and other possessions and dependencies of the United States.

HONGKONG.

REPORT OF TRANSACTIONS AT HONGKONG, BY ASST. SURG. JOHN W. KERR.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
OFFICE OF MEDICAL OFFICER IN COMMAND,
Hongkong, China, July 10, 1902.

SIR: I have the honor of submitting a report of the transactions at this station covering the period from September 15, 1901, to and including June 30, 1902. The year was a very busy one because of the large number of vessels leaving and because of the presence of epidemics of plague, cholera, and smallpox which prevailed in this city and surrounding districts. The following table gives the number of bills of health issued, the character of the vessel, the destination, number of officers and crew, cabin and steerage passengers, and the number rejected from all causes:

Destination.	Sail.	Steam.	Crew.	Cabin.	Steerage.	Rejections.
San Francisco	3	37	5,405	960	4,257	89
Puget Sound	4	48	4,052	136	1,903	54
Portland, Oreg	1	8	554	15	229	6
San Diego, Cal	0	3	137	1	16	1
New York	7	25	1,358	3	0	4
Baltimore	4	0	80	0	0	0
Philippines	2	205	13,306	2,215	4,861	66
Guam	1	0	13	2	0	0
Total	22	326	24,892	3,350	11,266	216

Thus it will be seen that 346 vessels were supplied with bills of health, representing a total of 24,892 officers and crew, 3,350 cabin and 11,266 steerage passengers. Two hundred and sixteen individuals were rejected at the inspection just prior to sailing.

Inspection service.—Inspections have been made on all vessels throughout the year with the exception of men-of-war. The Asiatic crews and steerage passengers have been physically examined, and during the presence of epidemics the cabin passengers have been mustered just prior to the sailing hour. In addition to the routine physical examination the temperatures of all steerage passengers have been taken since April 15, a total of 2,439. After March 22 all steerage-passenger traffic to the Philippine Islands was stopped, on request of the chief quarantine officer of those islands, because of the cholera epidemic in this and surrounding cities.

All cabin passengers were required to call at this office, and if they presented no symptoms of illness were given the following certificate, without which the steamship companies would not furnish them transportation:

MARINE-HOSPITAL SERVICE,
OFFICE OF MEDICAL OFFICER IN COMMAND,
Hongkong, ——— ———, 190—.

In my opinion ——— ———, bearing registry certificate No. ——, is at present free from quarantinable disease and may be accepted as a first-cabin passenger to ———, per steamship ———, subject to medical inspection just prior to the hour of sailing.

——— ———,
Assistant Surgeon, M. H. S.

This precaution greatly increased the office work and in the great majority of cases was unnecessary, as most of the cabin passengers are in transit. It appears, however, to have been effective, as thus far no cases of plague or cholera have developed on vessels during the voyage from this port to the Philippine Islands.

Supervision of cargo.—Inspection of all Chinese cargo to United States ports was carried on, in compliance with Bureau order of June 6, 1902, until the departure of Acting Asst. Surg. J. S. Hough made it impossible to do so. Many Chinese food products were prohibited until investigation proved that this character of cargo was unlikely to carry plague infection, and until after the receipt of Bureau order, dated January 23, 1902, allowing these freights to pass.

On account of the appearance of cholera in this port, March 4, 1902, a circular letter was issued to the steamship companies prohibiting the shipment of fresh fruit or vegetables to any port of the United States or its possessions. The companies were also notified that these articles should not be taken as ships' stores because of the danger to the ships. Trans-Pacific vessels, however, were forced to take some supplies because of the great length of the voyage, but in these cases were advised to take only articles unlikely to convey infection. Nineteen shipments of human hair, representing 304 cases; 16 shipments of cleaned bristles, representing 296 cases, and 110 bales of feathers were inspected and held in the "godown" thirty days prior to shipment to New York.

Disinfecting work.—Following the practice of last year, the holds of eight steamers were disinfected by the ships officers to kill rats. It was impossible through lack of assistance to supervise this work, and fortunately there was not the same necessity for the disinfection as last year, as the present plague epidemic has been mild compared with the epidemic of 1901. As a precautionary measure the decks and forecastles of 52 steamers destined to the Philippine Islands were washed down with a solution of mercuric chloride after being mechanically cleaned. Three vessels were held to complete fifteen days after the removal of a case of plague, and one vessel was held five full days after disinfection because of a case of cholera which occurred aboard while the vessel lay in this port. The routine disinfection of Asiatic crews and steerage passengers was carried on during the time covered by this report, 21,809 individuals having been bathed and 26,389 bundles of clothing having been disinfected during that time. All this work was done aboard the disinfecting hulk *Stanfield*, which was described in my report for 1901. No material improvements were made in the plant during the year except that a vacuum apparatus, received from Philadelphia, was attached to the large chamber. Forty sheet-iron burners were also purchased for burning sulphur in the disinfection of ships' holds.

Because of the increased amount of work, the company has increased the employees, the staff now consisting of 1 European captain, 1 American attendant, 1 Portuguese attendant, 1 Chinese interpreter, 1 engineer, 1 fireman, 1 boatswain, and 9 Chinese attendants. Since the middle of December, 1901, the hulk has also been used for the disinfection of the crews and steerage passengers of all steamers going to Canada, and as a result its capacity is at times greatly overtaxed. Any increase in the amount of work will necessitate a new plant.

Quarantinable diseases.—The year has been a notable one because of the number of quarantinable diseases which have appeared in the colony. Plague, cholera, smallpox, and typhus fever were all reported during the year, but the epidemics have been mild compared with previous visitations. There is every reason, however, to believe that these diseases were much more severe on the mainland. Hongkong is a depot and distributing center for the ports of south China, and during the presence of epidemics in any of these ports the shipping is more or less menaced. No statistics or reliable information are obtainable from any Chinese city, and the knowledge of contagious disease is hidden as long as possible in the interest of commerce. The foreign population, by long residence in the midst of unhygienic surroundings, have developed an indifference to contagious diseases, which makes it very difficult to carry out the necessary sanitary precautions demanded by the United States quarantine laws to be observed at foreign ports.

Cholera.—Cholera was first officially reported in Canton March 1, 1902, the captain of the British gunboat *Britomart* and a senior officer of the Chinese customs service being the first victims among the foreign population. The disease had undoubtedly prevailed for some time, although unknown to the foreign residents until the last week of February. The epidemic was very severe among the Chinese, and was especially marked by the relatively large number of foreign residents who contracted the disease. Although cholera is undoubtedly endemic in certain parts of China, it has attracted little or no attention since the China-Japanese war, when the disease was carried to Japan by soldiers and coolies and resulted in a severe epidemic in that country. This present outbreak may have originated in China, but it is more likely that the disease was imported from India or the Straits Settlements. The history of past epidemics shows that every Asiatic or European invasion has been preceded by a severe recrudescence of the disease in India—the especial endemic center of the disease—and that country has recently suffered from terrible epidemics following the severe famines of the past three years. During the past winter and spring the Malay Archipelago has also been visited by an epidemic, and China is only the next natural step in the progress of an Asiatic invasion. Thousands of Chinese coolies travel to and from the Straits Settlements monthly, and cases of cholera have actually been imported into Hongkong, Amoy, and no doubt into Canton. The first case reported in Hongkong was that of a Chinaman, the body being sent to the mortuary March 4, 1902, for diagnosis. Under ordinary circumstances the disease would not gain much of a foothold in this city because of its location and because of the well-protected water supply, which is collected from water sheds located high up in the hills and passed through filter beds before distribution. Because of the long-continued absence of rains, however, the failing water supply necessitated an intermittent daily distribution. The poorer Chinese population were forced to use water from the ditches and every other available source, and finally the Government was forced to import water from the mainland to supply the demand. Intermittent water supply is dangerous because of the liability of infection of the pipes, and it is pretty clearly proven that certain cases were due to this cause. The disease has been constantly present since its first appearance, but at no time has reached alarming proportions. Because of its geographical position, Hongkong suffers from the presence of epidemics in surrounding cities, and for that reason, also, the shipping to home ports requires more careful supervision. Three hundred and sixty-four cases and 318 deaths have been reported from March 4 up to and including June 30, a mortality of 87.3 per cent. The following table shows the cases and deaths in this city by weeks since the beginning of the epidemic:

Week ended—	Cases.	Deaths.	Week ended—	Cases.	Deaths.
Mar. 8, 1902	1	1	May 10, 1902	32	29
Mar. 15, 1902	12	9	May 17, 1902	39	36
Mar. 22, 1902	11	10	May 24, 1902	38	31
Mar. 29, 1902	17	16	May 31, 1902	32	31
Apr. 5, 1902	34	29	June 7, 1902	16	13
Apr. 12, 1902	22	21	June 14, 1902	5	5
Apr. 19, 1902	24	21	June 21, 1902	2	2
Apr. 26, 1902	25	24	June 30, 1902 (two days)	3	1
May 3, 1902	37	31			

These figures indicate the rise and fall of the epidemic, but no doubt fall short of the actual number; and the percentage mortality, as a result, is too high, as many of the milder cases must have gone unreported. Of the total cases reported 14 were Europeans, 10 were Japanese, and 14 were Asiatics other than Chinese. The poor-class Chinese population suffered most severely; no doubt because they were the worst sufferers from the water famine, and because they could not use tea as exclusively as the better-class Chinese population. The disease has spread far and wide throughout southern China, practically no district escaping. An isolated farming district (Sek Ki), about eight hours by steam launch southwest of Canton, was visited by me in May to determine if the disease had appeared there, as most of the potatoes in the local market come from there, while in the past large shipments of potatoes have been made from this district to supply the United States army in the Philippine Islands. It was found that large numbers of natives had died during the preceding two months, but it was impossible to determine whether cholera or plague claimed the most victims. This village was typical of the insanitary conditions which prevail in every inland Chinese city. The most extreme filth and squalor were everywhere apparent. The usual number of beggars, suffering with the nodular form of leprosy, surrounded our vessel. They live in boats on the river, and this is the only isolation practiced. The epidemic has declined in the south of China with the advent of the rainy season and has now extended to north China—Shanghai, Pekin, and Hankow reporting many cases. In addition to these, many smaller coast ports, including Hangchow, Soochow, Wusieth, Changchow, Krangyin, and Chinkiang are suffering severely from the disease.

Plague.—The epidemic of 1901, while more severe than any previous one since 1894, began to decline in July and practically no cases occurred after October 12, only two cases and one death having been reported from that time until December 31. Plague rats were found for some time after the disease disappeared among humans, and the present epidemic was preceded by an increased rat mortality. The city continued comparatively free from the disease during the first four months of this year, but with the advent of the warm weather and accompanying humidity there was a sharp rise in the number of reported cases. For the first six months of the year 382 cases and 373 deaths were reported, a mortality of 97.6 per cent. Of the total number reported 7 were Portuguese, 2 were Japanese, 4 were Indians, 1 was Malay, 1 was an European, and the rest were Chinese. No particular district has escaped, the cases coming from all parts of the city. But few cases have occurred in the "Peak district" and relatively few cases have been reported from ships in the harbor, although a number of plague bodies have been found floating in the harbor and on the beach. A vessel now in quarantine at this port because of plague, the Peninsular and Oriental steamship *Valetta*, carrying the outward English mails, is of especial interest, as it is a splendid example of the important part rats play in the dissemination of plague aboard ship, and thus transmitting the infection to ports far removed from the original source of infection. This vessel had lain in the harbor of Bombay for several months prior to starting on this voyage. The ship surgeon reported that early during the voyage dead rats were found aboard, and that after leaving Singapore several cases of fever developed, and the stewardess died of what was supposed to be heat apoplexy. After arriving here five cases of plague were landed, the first case dying while the steamer lay at the Kowloon dock. Dead rats were found aboard and one dead rat was found on the wharf, which on bacteriological examination was proven to have died of plague. Cage traps were employed to catch the rats aboard, 43 being caught in this manner. Three of this number were found dead in the traps, and 10 per cent of them were found to be plague infected on bacteriological examination. The length of the voyage from Bombay to Hongkong occupies about eighteen or twenty days, and the vessel called at two ports noninfected with plague. The usual number of bodies have been found in the streets, having been placed there to avoid the disinfection of the victims' quarters. In anticipation of this epidemic special precautionary measures were adopted by the sanitary authorities to decrease its severity. Extensive disinfection was practiced throughout the city, special efforts were made to destroy rats, drains were cleansed, the openings into sewers were screened with wire to prevent the exit of rodents, and house to house inspections were instituted. To these measures, in part, may be attributed the comparatively mild epidemic. The following table gives the cases and deaths by weeks since the beginning of the year 1902:

Week ended—	Cases.	Deaths.	Week ended—	Cases.	Deaths.
January 4, 1902	0	0	April 12, 1902	3	3
January 11, 1902	0	0	April 19, 1902	7	6
January 18, 1902	1	1	April 26, 1902	5	0
January 25, 1902	0	0	May 3, 1902	28	26
February 1, 1902	0	0	May 10, 1902	24	18
February 8, 1902	0	0	May 17, 1902	31	34
February 15, 1902	0	0	May 24, 1902	33	33
February 22, 1902	0	0	May 31, 1902	52	50
March 1, 1902	1	1	June 7, 1902	53	52
March 8, 1902	0	0	June 14, 1902	39	39
March 15, 1902	1	1	June 21, 1902	49	51
March 22, 1902	0	0	June 28, 1902	44	42
March 29, 1902	0	0	June 30, 1902 (2 days)	9	9
April 5, 1902	2	2			

The cities of Canton, Macao, and Amoy have also escaped severe epidemics of plague this year. Consular reports from the latter port state that there has been less plague there this year than during any preceding year since 1895. Pakhoi, Fatshan, and a few of the smaller villages in the Canton district have suffered severely.

Smallpox.—No smallpox was reported in this city until the week ended February 11, when 1 case was imported from the Straits Settlements. From that time until June 30, 53 cases and 36 deaths have been reported. Of this number, 2 were Europeans, 3 were Americans, 1 was an Indian, 1 was a Portuguese, and the rest were Chinese. Most of the cases among the Chinese are far in the stage of pustulation before they are discovered, and many are first reported from the public mortuary. With the advent of the warm season the disease has practically subsided.

Typhus fever.—But one case of this disease was reported during the year, and for that reason the diagnosis may be doubted. The case reported was a Chinese. Inquiries made following the report of this case indicate that ship fever is very uncommon on this coast.

Respectfully,

JOHN W. KERR,
Asst. Surg., Public Health and Marine-Hospital Service.

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

ENGLAND.

Owing to an outbreak of smallpox in London, the public health departments of Philadelphia and Baltimore requested that a medical officer be assigned to duty at that port for the purpose of inspecting outgoing vessels and vaccinating the passengers and crews. This request was granted, and an officer was also assigned to the port of Liverpool for the same purpose. The reports of these officers follow:

LONDON.

REPORT OF TRANSACTIONS AT LONDON, BY P. A. SURG. JOHN MCMULLEN.

CONSULATE-GENERAL OF THE UNITED STATES,
London, July 8, 1902.

SIR: In compliance with Bureau letter of May 28, 1902, I have the honor to submit the following report of the transactions at this station for the period ended June 30, 1902:

In view of the large number of cases of smallpox existing in London during the past winter it was considered advisable to adopt measures at this port to prevent the importation of this disease into the United States, and P. A. Surg. A. R. Thomas was ordered here from Glasgow in February last for this purpose. At this time there were about 1,200 cases of smallpox under treatment and about 60 admissions daily, the Borough of Stepney being one of the worst infected and one most visited by the sailors. The greatest number of cases occurred in March, when there were between 1,500 and 1,600 cases under treatment and about 500 weekly admissions to the hospitals.

All vessels sailing from this port for the United States after March 3, 1902, were directed to notify the consulate two days in advance, and they were visited either by the medical officer in command or his assistant at the time of their departure. The crew and cattlemen were inspected, and those who could not show recent successful vaccination marks or of having had smallpox were vaccinated. The bill of health was then countersigned and delivered to the captain of the vessel. Those vessels carrying surgeons, and only on the passenger ships of the Atlantic Transport Line was this done, the vaccination was performed by the ship surgeon. There are no steerage passengers from this port to the States. During the period from March 4, 1902, to June 30, 1902 (inclusive), there were inspected and given bills of health 128 vessels; 6,138 crew and 989 cattlemen were inspected, and of these 2,138 were vaccinated. Of these 128 vessels sailing from this port to the States 38 were bound for New York, 29 for Philadelphia, 22 for Boston, 6 each for Baltimore, New Orleans, and San Francisco, 9 for Newport News, and the remainder for various ports. Doctor Thomas was ordered to Manila in May, and the work was continued until my arrival by Acting Asst. Surg. Sylvester Willard. I assumed charge June 12, 1902, and since this time the inspection and vaccination have been done by myself and one assistant. During the month of May the number of smallpox cases began to decrease, and at this date only about 700 cases are under treatment. It was therefore recommended in a recent report that the work be discontinued after July 15, 1902, since the decrease would doubtless be continuous. Vaccination in England is at present not compulsory, but the majority of London's population have been vaccinated.

The official return of deaths in London for April, 1902, states that the deaths from smallpox at all ages from the beginning of the epidemic to April 5, 1902, amounted to 1,015, and among this number there were 932 cases in which the fact of vaccination or nonvaccination was definitely ascertained. Excluding 66 cases in which vaccination was not performed until after the patient's infection, there was only one death which occurred within ten years of the patient's vaccination; this was the death of an infant, aged 13 months, who was certified to have been imperfectly vaccinated.

Respectfully,
JOHN MCMULLEN,
P. A. Surg., Public Health and Marine-Hospital Service.

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

LIVERPOOL.

REPORT OF TRANSACTIONS AT LIVERPOOL, BY ASST. SURG. CARROLL FOX.

LIVERPOOL, ENGLAND, *July 2, 1902.*

SIR: I have the honor to make the following report on the transactions of this station and other matters for the period ending June 30, 1902:

Plague.—The small epidemic of plague which recently visited Liverpool presents several interesting points. First, the families attacked were socially respectable and in fairly comfortable circumstances, and therefore the squalor and filth with which plague is usually associated were in this outbreak entirely absent; secondly, a careful search about the premises failed to disclose the presence of rats, and at no time, although a war was waged against them throughout the city and their bodies examined bacteriologically, did they show evidence of being infected; thirdly, the original source of infection was really never satisfactorily traced; fourthly, the first case to be diagnosed was an isolated one, which was in no way connected with those that subsequently occurred or with those that by reference to the death returns were even suspicious of plague. This case was taken sick September 26, 1901, with headache and vomiting, and was admitted to the workhouse infirmary. On admission his temperature was 103.3°, with some delirium, photophobia, and irritability, and a small swelling in the left groin, attributed by the patient to a kick. The second day the temperature rose to 104° and dropped in the morning to 99.5°. This condition continued until October 2, when it was thought advisable to cut down upon the swelling and evacuate any septic material that might be present. The operation was performed, but no pus was found, and the patient succumbed the following day. The appearance of the glands on section suggested the possibility of plague, and subsequent microscopical and bacteriological examination proved this diagnosis to be correct. I believe there is a doubt entertained by some as to the correctness of this diagnosis. Owing to the obscure nature of this particular case and the time it took to establish a true diagnosis, no report was made to the medical officer of health until three weeks had elapsed. The history of the subsequent cases is as follows:

On October 23, 1901, two children were reported to be suffering with typhus fever. Upon the arrival of the ambulance inspectors it was found that one of these was nearly dead and that a third was ill. The two best able to be disturbed were removed to the hospital. On October 25 a doubt was raised as to the true nature of the disease, and on further investigation a young woman residing in the immediate rear of the house from which the children were taken was found to be sick with symptoms sufficiently characteristic to warrant a diagnosis of plague. On inquiry it transpired that the young woman's mother died at the same address on September 28 and her sister on October 3, each after an illness of short duration. One of them, it was said, complained of tenderness in the axilla. Both of these deaths had been attributed to influenza and disease of the chest.

Further, a woman living in the same street, and who had assisted in washing and laying out the mother, died suddenly on October 18. In each of these fatal cases it was impossible to pursue the investigation, as the bodies had been buried some time.

The two boys taken to the hospital died on October 26 and October 27, respectively, and bacteriological examination proved without a doubt that they had been suffering from plague.

On October 26 two children living in the house from which the young woman was taken were found to be ill, and they, with their mother, were removed to the hospital. One, after a brief illness, died of plague. All of these cases were intimately associated with each other, they being friends or playmates. The source of the infection was never satisfactorily determined. No infected rats were found, the dwellings were clean and not conducive to an outbreak of plague, and there was no connection between these cases and those that occurred in Glasgow. The most plausible explanation of the source of infection is as follows: A police constable, a lodger with the family in which the disease first appeared, was in charge of the Prince's Dock Mortuary, where bodies of unknown persons are taken who die in common lodging houses or who are found dead. This constable's duties compelled him to handle such bodies, and it is possible that in this way he may have come in contact with an undiagnosed case of plague, and thus carried the infection home. The steps taken to prevent the spread of the disease were very thorough. Besides the cases, a number of people, friends and relatives of the families in which the disease appeared, were isolated in hospital. Bedding and clothing likely to retain and spread infection were destroyed. The infected houses, as well as sewers, passages, outbuildings, and offices in the infected neighborhood were disinfected with bichloride of mercury. Persons who had been associated with the sick were detained from business. The medical staff was increased, the services of four physicians familiar with the disease being secured for house-to-house inspection. The sanitary staff was increased. Absentees from business and schools were visited. Those who were connected with the families in a business way were watched until the end of the incubation period. A few day and Sunday schools were closed. A war against rats was waged, and their bodies examined bacteriologically. A circular giving the important points in the diagnosis of plague was sent to every local physician. At the request of the United States consul a careful inspection of emigrants going to the United States was made, with a supervision of emigrant houses and the disinfection of emigrant trains.

Smallpox.—During the first ten months of the year 1901 there were 25 cases of smallpox reported in this city. Eight of these were imported by sea and 1 from a neighboring town. During the month of November there was no smallpox. Since that time, however, there has been more or less reported each week. At one time it seemed to be increasing to an alarming degree, although never to such an extent as to be called epidemic. The largest number reported for any week was 22, this occurring for the weeks ending February 8 and March 8, 1902. The total number for the period beginning December 6, 1901 (the commencement of the present outbreak), to June 30, 1902, is 171, with 5 deaths, 4 in unvaccinated people. A number of cases were imported by sea, mostly from the United States, and still a greater number developed smallpox in the city from contact with these imported cases. The health department is very energetic in its efforts toward preventing the spread of and stamping out the disease, and the measures taken are very efficient. The authorities are, however, hampered in several ways by defective legislation. (*a*) The vaccination act gives the proper officers the power to vaccinate those who have never undergone the operation, but they can not compel a person who has been vaccinated to submit to a revaccination. (*b*) There is also a clause in the vaccination act which allows an individual who has a "conscientious objection" to vaccination to secure an exemption certificate. It is true that very few apply for such a certificate, but those very people, no matter how small their numbers, being unprotected by vaccination, may be the very ones to spread contagion. (*c*) The vaccination staff, instead of being part of the health department, is under the control of the various boards of guardians. This means that there is always a delay upon the discovery of a case of smallpox by the sanitary authorities in communicating with the vaccination officers belonging to an entirely different body. (*d*) False information may be given to the health officers regarding the existence of an infectious disease without fear of punishment. There is at present a clause in the Liverpool corporation bill now before Parliament which reads as follows:

"Any person who, when applied to by the medical officer of health for the city or by any officer acting on his behalf and on his instructions for information as to any dangerous or infectious disease, withholds any information in his possession or knowingly gives false information shall be liable to a penalty not exceeding forty shillings."

To return to the subject of methods used in combating smallpox. Upon the notification of a case of smallpox the case is isolated in hospital, and the same day the entire house is disinfected, as well as the bedding and the clothing. The next day the wall paper is removed and burned. Inspectors of the health department visit the house and ascertain the number of contacts and particulars as to vaccination. The information is then sent to the vaccination officers. If any person from a neighboring town has been with the patient, word is sent to the health officer of that town. Word is also sent to the school attended by any children living in the infected house, thus preventing further attendance. Where a case has broken out in a court or under especially unhygienic surroundings, the inmates as well as the case are removed to the hospital. Under other circumstances the quarantining of contacts is not usually practiced. They are, however, visited every day for fourteen days, and every few days thereafter for another two weeks. Where they absolutely refuse to submit to revaccination it is intimated to their employers that they had better remain away from work for two weeks. That this routine practice is efficient I think is proved by the satisfactory way in which smallpox has decreased since the months of February and March, at which time an epidemic was threatened. Considering that there has been an epidemic of smallpox in London, and that smallpox has been reported from many places in the United Kingdom, and also considering the amount of commerce which goes on at this important port, with the constant danger of cases being imported by sea, I think the authorities deserve credit for having limited the disease, as they have done, to a few cases of smallpox each week. In the month of February two steamship lines, the Johnston and the Warren, running to Baltimore and Boston, respectively, desired to have the employees on their vessels vaccinated, and as I was in a position to sign the bill of health they asked me if I would do the vaccinating for them, they supplying the vaccine material.

This I consented to do voluntarily. It was done entirely at their own request, and was in no way forced upon them by orders emanating from this office. I vaccinated at that time the officers, crews, and cattlemen of 15 steamships. Those who could show satisfactory vaccination scars of recent date, or those who had had smallpox, were not subjected to the operation. The cattlemen are frequently taken from the lowest class of society. They are ignorant and dirty, and both on land and sea live in a very unhygienic atmosphere. Their condition is not bettered aboard ship, and is even made worse when they arrive on this side, as they have little money and have therefore to find the cheapest, lowest places to reside during their stay here. A supervision of these men by the United States Government would greatly improve their condition. Such supervision should include vaccination, this not only to protect the steamship companies in whose ships they sail and the inhabitants of ports they enter, but also to protect the cattlemen themselves. Mr. James Boyle, in his report to the State Department, has taken up the consideration of cattlemen and their condition.

Typhus fever.—During the year 1901 there were 50 cases of typhus fever, with 14 deaths, the majority of deaths taking place during adult age. For the six months ended June 30, 1902, there were 29 cases and 6 deaths. This disease has been gradually decreasing as the knowledge of efficient sanitation has become more exact.

One move being made toward bettering the condition of the poor, and which is important from a sanitary standpoint, is the demolition of insanitary dwellings in the slum districts, and the removal of the inmates of such dwellings to new and better houses. In course of time all of these small, dirty houses will have been destroyed and the tenants removed to larger, more thoroughly ventilated, modern dwellings, with better hygienic environments, and when this is accomplished one would expect to find less sickness among the poorer classes, especially in the case of typhus fever, which depends for its existence upon filthy surroundings and foul air. The methods used against typhus are as severe as in the case of smallpox—isolation of the patient, daily visits to the infected house, and all other precautions that are usually taken against infectious diseases.

Inspection of vessels.—Vessels may be inspected before leaving the dock or after they have gained the river. The first, although it presents certain disadvantages, is the method that has been pursued here in the past and that would probably have to be used here in the future. The second is the method that I believe is used in London, where the inspecting officer accompanies the vessel down the river as far as Gravesend.

Disadvantages of inspecting vessels while in docks.—Although the crew are told to report several hours before the ship is to leave, as a matter of fact there are nearly always from 1 to 6 men who fail to show up even at the time of departure. It seems to be customary to wait until the vessel gets into the river before replacing these men, as some of them may come aboard while the ship is passing through the narrow gateways leading from dock to dock and out into the stream. Again, it is not infrequently the case that men who have reported at the proper time desert while the vessel is passing through the gateways, and these men can only be replaced after the steamer has gotten into the river. The sailor boarding-house keeper, anticipating such occurrences, usually takes a half-dozen men out on the tender, so that they may be signed on the articles at the last minute in place of those who fail to join or desert. Of the 15 vessels that I visited for purposes of vaccination the majority had to sign men on after they had gotten into the river. The fact that men fail to join at the proper time, and, in the hurry to get away, sometimes leads the ship's officer in an attempt to deceive the inspecting officer by directing men to answer during the roll call, not only for themselves but for others who have not made their appearance, and also by bringing before him men that he has already seen for men that really have not yet reported for duty. The absentees may be replaced before the vessel leaves her moorings, but this is no guarantee that there will be no desertions later on.

Inspections in the river.—By inspecting vessels in the river all the above difficulties are overcome. It is, in fact, the only way an officer can be sure that he has seen all those men who are going to make the voyage. It has, however, one great drawback, which makes it rather impracticable. One officer can only inspect one vessel on one tide, whereas there may be five or six vessels leaving on the same tide from docks far removed from each other, thus necessitating the presence of a number of examining officers.

Advantages of inspecting in the docks.—By inspecting while in the dock, and leaving the vessel before she casts off her lines, two officers may accomplish all the work. All of the above applies to freight liners and tramp steamers. Passenger liners are satisfactorily inspected at the landing stage.

I am greatly indebted to Doctor Hope, the medical officer of health, for information concerning the health conditions in this city, such information being willingly given at all times.

Respectfully

CARROLL FOX,
Asst. Surg., Public Health and Marine-Hospital Service.

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

MEDICAL INSPECTION OF IMMIGRANTS.

The inspection of arriving alien immigrants is now made by medical officers of the Marine-Hospital Service at 32 ports of the United States, these ports appearing in the appended table. Inspection of immigrants is also made at the ports of Quebec and Halifax. Report of the inspection at the last-named ports will also be found appended hereto.

UNITED STATES.

Medical inspection of arriving alien immigrants at the various ports of the United States, fiscal year ended June 30, 1902.

Name of port.	Total immigrants inspected.	Passed.	Certified as physically unsound.	Disposition of those certified as physically unsound.					
				Cases pending at beginning of year.	Certified.	Total to be accounted for.	Refused admission.	Admitted.	Cases pending at close of year.
Portland, Me	3,771	3,768	3	0	3	3	3	0	0
Gloucester	0	0	0	0	0	0	0	0	0
Boston	41,233	41,162	71	0	71	71	32	38	1
New Bedford	326	324	2	0	2	2	1	1	0
Providence	130	130	0	0	0	0	0	0	0
New York	565,983	562,994	2,989	41	2,989	3,030	1,064	1,901	65
Philadelphia	17,461	17,141	320	2	320	322	34	286	2
Baltimore	40,065	39,986	79	0	79	79	34	45	0
Newport News	0	0	0	0	0	0	0	0	0
Norfolk	11	11	0	0	0	0	0	0	0
Savannah	0	0	0	0	0	0	0	0	0
Brunswick	0	0	0	0	0	0	0	0	0
Jacksonville	0	0	0	0	0	0	0	0	0
Key West	6	6	0	0	0	0	0	0	0
Port Tampa	0	0	0	0	0	0	0	0	0
Pensacola	0	0	0	0	0	0	0	0	0
Mobile	0	0	0	0	0	0	0	0	0
New Orleans	4,385	4,374	11	0	11	11	3	8	8
Galveston	1,093	1,090	3	0	3	3	0	2	1
Laredo	1,789	1,782	7	0	7	7	7	0	0
Eagle Pass	2,600	2,527	73	0	73	73	73	0	0
El Paso	6,708	6,589	119	0	119	119	119	0	0
San Diego	27	27	0	0	0	0	0	0	0
San Francisco	7,760	7,730	30	2	30	32	26	6	0
Portland, Oreg	0	0	0	0	0	0	0	0	0
Astoria	94	94	0	0	0	0	0	0	0
Tacoma	2	2	0	0	0	0	0	0	0
Seattle	701	695	6	0	6	6	6	0	0
Port Townsend	0	0	0	0	0	0	0	0	0
Sault Ste. Marie	0	0	0	0	0	0	0	0	0
Detroit	86	68	18	0	18	18	18	0	0
Buffalo	393	343	50	0	50	50	50	0	0
Total	694,624	690,843	3,781	45	3,781	3,826	1,470	2,287	69

MEDICAL INSPECTION OF IMMIGRANTS AT NEW YORK.

As may be seen from the foregoing table, by far the largest amount of work thrown upon the Service in the medical inspection of immigrants is at New York, and the following tables are herewith inserted as indicating the extent, and in some respects the character, of the work performed. Interesting tables, enumerating the diseases found among immigrants and other pertinent facts concerning them, as reported by the surgeon of the Public Health and Marine-Hospital Service in charge of the medical inspection at New York, are published in the annual report of the Commissioner-General of Immigration for the fiscal year ended June 30, 1902.

Summary of hospital transactions, fiscal year ending June 30, 1902.

UNITED STATES IMMIGRATION SERVICE, MEDICAL DIVISION,
New York, July 1, 1902.

Number of patients in hospital at beginning of year	153
Patients admitted to hospital during year	3, 721
Total treated (men, 1,522; women, 1,016; male children, 702; female children, 634)	3, 874
Births (male, 4; female, 3)	7
Deaths (men, 35; women, 10; male children, 53; female children, 38)	136
Pay patients treated during the year	3, 718
Free patients treated during the year	156
Days treatment for pay patients	45, 901
Days treatment for free patients	2, 8[illegible]
Total days treatment for hospital cases	48, 7[illegible]
Average daily attendance in hospital	13[illegible]
Patients in hospital at the end of year	164

Work of the medical examiners, New York.

Steerage passengers inspected upon arrival	497, 791
Of these there were—	
Sent to hospital	3, 531
Certified on account of dangerous contagious or loathsome diseases or other physical causes	2, 833
Recorded (minor defects)	19, 517
Cabin passengers inspected upon arrival	68, 192
Of these there were—	
Sent to hospital	42
Certified on account of dangerous contagious or loathsome diseases or other physical causes	156
Recorded (minor defects)	1, 607
Immigrants applying for relief within one year after landing	416
Of these there were—	
Relieved in hospital and discharged upon recovery	79
Relieved in hospital and certified for deportation	69
Certified for deportation, but not placed in hospital	138
Relieved in dispensary	4
Examined and found to be no medical cases	126

CUBA.

Medical inspection of arriving alien immigrants at the various ports of Cuba, July 1, 1901 to May 20, 1902.

Name of port.	Total immigrants inspected.	Passed.	Certified as physically unsound.	Disposition of those certified as physically unsound. Cases pending at beginning of year.	Certified.	Total to be accounted for.	Refused admission.	Admitted.	Cases pending at close of year.
Habana	19,818	19,792	26	0	26	26	20	6	0
Batabano	0	0	0	0	0	0	0	0	0
Matanzas	8	8	0	0	0	0	0	0	0
Santiago	2,561	2,561	0	0	0	0	0	0	0
Guantanamo	36	36	0	0	0	0	0	0	0
Daiquiri	622	622	0	0	0	0	0	0	0
Manzanillo	17	17	0	0	0	0	0	0	0
Cienfuegos	245	245	0	0	0	0	0	0	0
Total	23,302	23,276	26	0	26	26	20	6	0

PORTO RICO.

Medical inspection of arriving alien immigrants at the various ports of Porto Rico, fiscal year ended June 30, 1902.

Name of port.	Total immigrants inspected.	Passed.	Certified as physically unsound.	Disposition of those certified as physically unsound.					
				Cases pending at beginning of year.	Certified.	Total to be accounted for.	Refused admission.	Admitted.	Cases pending at close of year.
San Juan	860	858	2	0	2	2	0	2	0
Mayaguez Arecibo Humacao Aguadilla Fajardo Arroyo	115	115	0	0	0	0	0	0	0
Ponce	312	312	0	0	0	0	0	0	0
Total	1,287	1,285	2	0	2	2	0	2	0

HAWAII.

NUMBER OF IMMIGRANTS EXAMINED AT THE PORT OF HONOLULU, HAWAII, DURING THE FISCAL YEAR ENDED JUNE 30, 1902, BY P. A. SURG. L. E. COFER.

PORT OF HONOLULU, HAWAII, *July 1, 1902.*

Total immigrants inspected	2,656
Passed	2,651
Certified as physically unsound	5
Disposition of those certified as physically unsound:	
Cases pending at beginning of year	0
Certified as physically unsound	5
Total to be accounted for	5
Refused admission	1
Admitted	4
Cases pending at close of year	0

QUEBEC.

REPORT OF THE MEDICAL INSPECTION OF IMMIGRANTS AT QUEBEC, CANADA, BY ASST. SURG. V. G. HEISER.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
OFFICE OF MEDICAL OFFICER IN COMMAND,
Quebec, Canada, July 22, 1902.

SIR: I have the honor to transmit herewith the regular report of the transactions of the medical division of the immigration service at the ports of Quebec, St. John, and Halifax for the fiscal year ended June 30, 1902. In addition, I inclose also a tabulated statement which shows the number and kind of diseases detected and the final outcome of each case.

The facilities for making the medical inspection have been much improved during the past year. At present the accommodations provided, especially those at Quebec, will compare favorably with those at any of the immigrant stations of the United States. The facilities for treating immigrants afflicted with disease are excellent at Quebec. At St. John, during the early part of the winter season, the hospital facilities were very poor, but toward the close of the season matters were much improved. At Halifax the steamship companies are not accorded the privilege of placing afflicted immigrants in the local hospitals, and since the Canadian officials do not approve of having them treated at the immigration buildings, the work at that port is of necessity very unsatisfactory.

The facilities for successfully detaining immigrants at any of the above ports leave much to be desired. During the year an amendment was made to the Canadian immigration law which corresponds in its scope very closely to the medical features of the United States immigration law. When this law becomes effective, it is hoped that there will no longer be any difficulty about detaining immigrants for medical reasons who are bound for the United States.

The efficiency of the inspection in Canada is much hampered by the fact that diseased immigrants, whose real destination is the United States, are often booked to Canadian border points, from which places they attempt to enter the United States without inspection. This is another difficulty which should disappear when the new Canadian law is put in full force.

The Public Health and Marine-Hospital Service is represented in the Canadian border inspection by one assistant surgeon, who has been acting in the capacity of medical inspector of immigrants as well as immigrant inspector and interpreter.

In conclusion I wish to express my thanks for the many courtesies extended us by the Canadian officials who are connected with immigration matters. I desire, also, to express my thanks to our own immigration officers, without whose cooperation the medical work connected with the station would have been rendered much more difficult.

Respectfully,

Victor G. Heiser,

Asst. Surg., Public Health and Marine-Hospital Service.

Surgeon-General, Public Health and Marine-Hospital Service.

[Inclosure.]

Number of immigrants examined at the ports of Quebec, St. John, and Halifax during the fiscal year ended June 30, 1902.

Total immigrants inspected	24,428
Passed	23,909
Certified as physically unsound	519
Disposition of those certified as physically unsound:	
Cases pending at beginning of year	7
Certified as physically unsound	519
Total to be accounted for	526
Refused admission	228
Admitted	237
Cases pending at close of year	64

[Inclosure.]

Diseases found among immigrants bound for the United States who landed at the ports of Quebec, St. John, and Halifax during the fiscal year ended June 30, 1902.

[Total examined, 24,428.]

Disease.	Examined.	Released by board of special inquiry.	Deported.	Disappeared.	Settled in Canada.	Ordered to hospital.	Recovered.	Observation.	Died.	Remaining from 1901.
Anchylosis of hip joint	......	......	......	......	......	......	......	......	......	......
Blindness	2	2	......	......	......	......	......	......	......	......
Bronchitis	4	......	......	......	......	......	4	......	......	......
Cerebro-spinal meningitis	1	......	......	......	......	1	......	1	......	......
Childbirth	4	......	......	......	......	4	4	......	......	......
Conjunctivitis:										
Follicular	1	......	......	......	......	1	1	......	......	......
Granular	78	......	9	7	8	78	22	32	......	......
Suppurating	12	......	......	......	4	12	6	2	......	......

Diseases found among immigrants bound for the United States who landed at the ports of Quebec, St. John, and Halifax during the fiscal year ended June 30, 1902—Cont'd.

Disease.	Examined.	Released by board of special inquiry.	Deported.	Disappeared.	Settled in Canada.	Ordered to hospital.	Recovered.	Observation.	Died.	Remaining from 1901.
Clubfoot	1	1								
Concussion, brain	1					1	1			
Deaf mute	1	1								
Debility	14	10	1			3	3			
Deformity of hand	1	1								
Diarrhea, chronic	1					1			1	
Diphtheria	1					1			1	
Dysentery	8					3	2		1	
Eczema:										
General	1					1	1			
Scalp	9				1	9	8			
Enteric fever	3					3	3			
Erysipelas	1			1		1				
Favus	28	1	7	12	3	28	4	1		
Gastritis	2					2	2			
Gonorrhea	1					1	1			
Hemiplegia	2	2								
Hernia	76	46	11	17				2		
Hysteria	1					1	1			
Idiocy	1		1							
Infected wound of foot	1					1	1			
Infected wound of thumb	1					1	1			
Influenza	2					2	2			
Insanity	1		1							
Kyphosis	7	7								
Lipoma of axilla	1	1				1				
Lardosis	1		1							
Loss of arm	3	2		1						
Loss of hand	1	1								
Loss of leg	2	2								
Lupus of face	1			1		1				
Luxation of hip joint, chronic	4	4								
Marasmus	2					2	1		1	
Measles	16					16	13		3	
Melancholia	1					1		1		
Meningitis	1					1	1			
Mutilated hand	2	2								
Necrosis, bones of foot	1					1	1			
Necrosis, malar bone	1	1				1				
Otitis media, chronic, of both ears	1			1		1				
Paralysis:										
Arm	3	1		1				1		
Infantile	1	1								
Leg	3	3								
Peritonitis	1					1		1		
Pleurisy	1					1	1			
Pneumonia	1					1	1			
Poor physique	7	1	3	2	1					
Pregnancy	19	6	3	4	2	5	2	2	1	1
Psoriasis	1		1			1				
Puerperal fever	1					1		1		
Rheumatic fever	1					1	1			
Scabies	7			1		7	6			
Scarlet fever							2			2
Scoliosis	4	4								
Suppurating glands of neck	4			1		4	2	1		
Syphilis	1			1		1				
Senio synovitis of wrist	1					1	1			
Tenia sycosis	3					3	2	1		
Tenia torsurans	5		2	2		5	1			
Trachoma	136	8	32	62	5	136	15	17		3
General tuberculosis	1					1	1			
Tuberculosis of hip joint	2			2						
Tubercle, lungs	5		5			5				
Tubercle, peritonitis	1					1		1		
Tumor, testicle	1		1			1				
Ununited fracture femur	1	1								
Valvular disease of heart	6		2	3		6	1			
Vaccinia	1					1	1			
Weak mind	1		2							1
Total	519	109	82	119	24	363	120	64	8	7

ITALY.

The work of inspecting emigrants at the port of Naples, one of the largest ports of embarkation in the world, has been continued during the fiscal year. The report of the transactions of the officer there on duty is as follows:

REPORT OF THE MEDICAL INSPECTION OF EMIGRANTS AT THE PORTS OF NAPLES AND PALERMO, ITALY, BY P. A. SURG. J. M. EAGER.

OFFICE OF MEDICAL OFFICER IN COMMAND,
PUBLIC-HEALTH AND MARINE-HOSPITAL SERVICE,
Naples, Italy, July 1, 1902.

SIR: As directed by Bureau letter dated May 29, 1902, I have the honor to make the following report of the transactions of the Service at this port covering the period from September 15, 1901, to June 30, 1902, inclusive:

Statistics of the Service at Naples.

Months.	Ships.	Number of emigrants.			Baggage.	
		Genoa.	Naples.	Palermo.	Inspected.	Disinfected.
1901.						
September 16	8	165	2,527	960	845	4,760
October	18	556	7,601	4,006	7,700	13,398
November	15	662	7,952	121	2,329	10,871
December	17	517	6,725	188	1,461	8,486
1902.						
January	21	489	6,662	257	1,321	8,657
February	18	787	13,172	105	1,270	19,870
March	28	1,430	23,508	700	2,275	34,196
April	25	1,581	22,634	1,260	2,390	31,606
May	32	1,308	27,501	1,122	4,640	36,216
June	17	617	11,978	294	2,511	16,870
Total	199	8,062	130,255	8,963	26,742	184,927

Rejections advised.

Months.	Trachoma.	Favus.	Hernia.	Ringworm.	Smallpox.	Measles.	Fever.	Other causes.	Total.
1901.									
September 16	47	3	5	5	1	....	12	8	81
October	299	20	47	4	1	....	121	36	528
November	128	26	43	9	....	....	2	32	240
December	105	18	14	....	....	1	....	29	167
1902.									
January	153	11	13	3	....	2	1	14	197
February	219	22	16	6	....	1	2	20	256
March	515	29	55	3	....	....	14	33	649
April	1,054	30	66	5	....	....	12	39	1,206
May	1,455	41	79	1	1	1	5	40	1,623
June	537	19	67	2	2	3	16	16	662
Total	4,512	219	405	38	5	8	185	267	5,639

The inspections at Naples and Palermo.—The inspections at Naples and Palermo are made under the United States quarantine regulations. Incidental to the examination of passengers prior to embarking all persons who would be likely to be refused admission under the immigration laws at the port of arrival are set aside and their rejection advised. This feature is of great importance to the steamship companies and saves them from bringing back to Italy, without payment of passage, many persons who on arrival in the United States would be marked for rejection as suffering from dangerously contagious or loathsome disease or from conditions of health likely to render them public charges. The number of rejections advised is seemingly large. This is due to two causes. In the first place, the visit is taken advantage of by persons who, aware of their physical infirmities, would not risk a voyage to the United States to be in all probability rejected there. The visit here costs them nothing and gives them a self-satisfying test of whether they are likely to be refused entry into the United States. Secondly, many undesirable persons present themselves repeatedly at the visit, some of them after an ineffective course of treatment and others in the hope that they may slip through on a happy day when the rigidity of the visit is relaxed. The business of treating trachoma so that sufferers from that contagion may enter America has taken on considerable proportions among certain local medical practitioners, and one even sees in the daily newspapers quack advertisements guaranteeing the cure of contagious granular conjunctivitis in short order.

Under directions from the Bureau cabin passengers are not inspected by the Marine-Hospital Service at Naples. As a result many unfit subjects purchase cabin passage. Of late, however, this practice has diminished, for the reason that the steamship companies, in self-defense, have ordered a visit by the ship's surgeon to all cabin passengers who are not Americans. When this visit first began there was often a great clearing from the cabin list. For instance, one British steamship turned away some eighteen out of about forty cabin passengers already comfortably installed in their staterooms the afternoon the vessel was to sail. Scarcely a vessel leaves without setting ashore several cabin passengers. Under the new Italian emigration regulations (a translation of which was, under date of November 25, 1901, transmitted from this office to the Bureau and later published in the Public Health Reports) medical officers of the Italian navy, acting as royal commissioners, accompany all emigrant ships leaving Italy. It often happens that a naturalized citizen of the United States suffering from some contagious but not quarantinable disease, such as favus or trachoma, is found among the passengers. In this case the Italian royal commissioner usually requires the person to make the passage to America in the ship's hospital.

The method of making the inspection of vessels, personnel, cargo, and baggage at Naples has been fully described in previous reports. The methods, though not in as good working order, are practically the same at Palermo. There is a project about to be carried into effect to increase the facilities for baggage disinfection here by building a new maritime disinfecting plant for the sole use of emigrant vessels. The plant at present in operation is also used for arriving vessels, and in consequence when extensive operations are being carried out on incoming ships there is a delay in treating emigrant baggage. The operations of the station at Naples are done, as far as the United States are concerned, by one medical officer of the Marine-Hospital Service, one medical assistant (temporary acting assistant surgeon), and one clerk.

Smallpox in Italy.—Owing to the presence of smallpox at Naples, and in many other regions of Italy from which emigrants come, all third-class passengers have during the past fiscal year been vaccinated prior to embarkment. The vaccination of these thousands of people (130,255 during the period covered by the report) has demanded careful systematizing. Vaccination is conducted in a house especially arranged for the operation. It is done by medical men engaged by the steamship companies. The appointment of the vaccinating physicians is subject to the approval of the United States Marine-Hospital officer, who has supervision of the whole procedure, and whose advice is taken in regard to the source and condition of the virus. Prior to entering the place for vaccination the emigrants are provided with inspection cards. On entering the room where the vaccination is done an attendant prepares them for the operation. A large number of vaccinating scarifiers set in penholders are provided. The glycerinized virus is used. As each person comes down the line a sterilized scarifier that has been dipped in virus is handed to the doctor. The operation finished, the scarifier is given to an attendant who sterilizes it in a flame previous to its being used again. Each person is detained in the house, under observation, until the site of the operation is dry. Yet on leaving the house emigrants have been observed to spit on their hands and rub their arms vigorously. Before leaving the house the person vaccinated presents his inspection card and the doctor signs his name thereon.

Plague at Naples.—The presence of plague at Naples gave rise to many weeks of hard work and active vigilance in September, October, and November, 1901. Between September 29 and October 31, while full precautions were being insisted upon, 12 vessels with 7,601 emigrants left Naples for the United States. All arrived in good condition. In addition to the inspection of vessels, cargo, crews, and passengers, every piece of baggage was disinfected, all food stuffs taken away from the emigrants, and the temperature taken of all persons going on board. Eight thousand one hundred and twenty-nine persons were examined with the thermometer between September 29 and October 31, inclusive. All persons having a temperature above normal were detained. Vaccination was omitted as likely to increase the liability of infection and tending to confuse diagnosis in case of suspicious illness aboard at the port of arrival. Great care was taken to scrutinize the cargo and articles brought on board ship by passengers and others. A watch was kept to prevent traffic between "bum boats" and persons on board departing vessels, and all vessels were required to take approved precautions in order to keep off rats. Shippers were required to bring their invoices to the consulate before the sailing of vessels. Lists were prepared of articles usually shipped from Naples, and these articles were divided into three categories, namely, those that may be shipped without disinfection, articles to be disinfected, and prohibited articles.

Primitive types among Italian emigrants.—In the last annual report of this station a short sketch was given of the pathology of the Italian emigrant. The maladies most commonly seen at the visit were briefly considered, especially in their relation to immigration laws. Besides the ordinary deformities, which, when sufficiently marked to be crippling, are causes for rejection, there are seen almost every day at the inspection many slight deviations from the normal physique interesting in themselves, but not grave enough to warrant rejection. Among the most striking of these departures from the ordinary human type are those marks of inferiority which have been so thoroughly studied, especially in Italy, in their relation to crime. The interest is, of course, anthropological. Emigration itself is, however, one of the most engaging facts in the natural history of man. In the constantly changing group of medical men who attend the visit of emigrants at Naples in the interest of the United States and Italian Governments and of the steamship companies there are daily discussions on the physical traits of the Italian "contadini" who come down the line for embarkment. Mongolian and negroid types are common enough, and heads are often seen reminding one of those skulls of primitive man that have been found preserved in caves in France, Belgium, and England. Frequently an undersized peasant is seen with the abnormal skull, the hollow forehead, the somewhat oblique eyes, the deformed and displaced ears, the flattened nose, the great prominence in the masseteric region, the prognathism, and other stigmata so much dwelt upon by Lombroso in his anthropological studies. Tattooing, frequently extensive, is often seen. These disfigurements are sometimes of devotional origin, being the records of pilgrimages to shrines. For example, one old woman who appeared at the inspection a few months ago bore twelve tattooings representing the Madonna of Loreto. They covered both arms. It goes without saying that these marks have no connection with the ritual at the shrines.

In observing these inferior types, to which happily it may be added the average Italian emigrant does not belong, one is tempted to hazard a conjecture as to the usefulness of such material for the formation of the future American. It is generally admitted that primitiveness is conducive to disease. Inferior types of men are more prone than advanced types to disease when surrounded by the whirl of modern social life. Then, too, there is the question of delinquency. The view is generally accepted that men of the primitive type have a special criminal tendency, manifested particularly when they are brought into a highly organized society. In considering these abnormal persons, the question of degeneration does not arise. As has been pointed out by Prof. Pasquale Penta, a prominent Neapolitan anthropologist, certain inferior types found in remote and destitute parts of Italy possess in a notable degree those characters which are called the stigmata of degeneration. Degeneration, however, implies a retrogression, a loss of something already acquired. These people have always lived under unhappy conditions, and have never possessed a better physical or mental make-up. The phenomena, then, that they exhibit are not those of degeneration, but simply those of primitiveness. Some evil fate of locality, some unfavorable state of politics acting through long periods of history, has held them back on the road along which the more favored people of the land have rapidly traveled. These unfortunate ones have indeed advanced from the savage state of prehistoric man. It is not a question of being paleolithic and living in caves and using stone tools and weapons. But still it is a question of being so far behind the times that the bones bear the mark and the brain tells the tale of backwardness.

Under the immigration laws of the United States all persons are excluded who are likely to become public charges. It would be interesting to know what proportion of these retarded people develop, in the land of their adoption, those latent propensities which are attributed to them in their own land. It is taught that primitive types in Italy are on the borderland of delinquency, and that they show, among other physical defects, a jealousy for their women; a lack of confidence in the action of organized justice; a tendency to do for themselves, regardless of the common practices, customs, and laws of the country; the love of revenge, and the transmission of the vendetta from father to son. Though not necessarily effective delinquents, it seems to be admitted that these backward people possess those moral qualities that under suitable environments develop into criminality, and that their lack of physical stamina means proneness to disease.

Respectfully,
J. M. EAGER,
P. A. Surg., Public Health and Marine-Hospital Service.

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

IMMIGRATION AND TUBERCULOSIS.

A question having arisen as to whether tuberculosis should be considered as a disease in the category of those which under the immigration law required exclusion, the following memorandum and report of a board specially convened for the consideration of the subject were transmitted for the consideration of the Secretary of the Treasury.

The subject will be given careful consideration in the preparation of the book of instructions for the medical inspection of immigrants to be issued shortly, to the end that the public health may be conserved without undue hardship to the immigrant.

[Memorandum.]

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL MARINE-HOSPITAL SERVICE,
Washington, December 21, 1901.

The terms of the law require the exclusion of immigrants "with a dangerous contagious disease." It has been disputed that tuberculosis of the lungs is a contagious disease. Inclosed is a list (Appendix A) of 18 of the principal scientific medical authors of the United States, Germany, and France, whose works classify tuberculosis as a contagious or infectious disease, making no distinction between these two terms and making no classification termed "communicable."

The only text-book found, after a reasonable search through the library, that refers particularly to "communicable" diseases is that of Delafield and Prudden, page 167, edition of 1901, and even this work does not make a distinct classification embodying "communicable" diseases, but rather descants upon the desirability of dispensing with the word "contagious" and using the word "communicable" in its stead, but in the index reference is made only to contagious and infectious diseases, and even in this text-book the use of the word "communicable" does not do away with the idea of contagion.

There seems to be no doubt, therefore, that within the meaning of the law, and as expressed by the 18 authorities already referred to, tuberculosis of the lungs is a contagious disease.

Now, is it a dangerous contagious disease? So fatal is it and so prevalent that it has been termed the "great white plague." There is a world-wide movement now in progress for its suppression, and that it is a dangerous contagious disease is shown by the action of State and municipal authorities. Most cities have now regulations with penalties for their violation to prevent spitting in public conveyances and places of public assemblage, and in some instances upon the streets, the reason of these ordinances being that the dried sputum from consumptives may be inhaled and the disease contracted. A number of Western States have proposed, through their boards of health, to prevent the ingress of consumptives within their own borders. Consumptive patients in most city hospitals are segregated from the other patients and kept in special wards. It is true that consumption may lose some of its dangerous character when the subject is made to observe certain restrictions which involve his personal habits. So, also, it may be said that most contagious diseases may be robbed of a large part of their danger by restrictive measures, but the law has not taken these restrictive measures into account. It does not say that an immigrant with a contagious disease may be admitted provided he will carry a sputum flask with him and use it and disinfect it, or provided he will reside under good hygienic conditions and not mingle in closely crowded tenements.

If cases of this kind are admitted under this special pleading there is no reason why almost all of the contagious diseases may not be admitted under somewhat like pleading, and the intent of the law not fulfilled.

Now, with regard to the law and its enforcement, the remark so often made is here pertinent, that a law or regulation in its administration may be so unwisely enforced as to make it appear impracticable and to defeat its very object. As stated in the report, December 7, of the board convened to consider the case of Immigrant Holden (Appendix B), tuberculosis of the lungs in its early stages may not be contagious, but in later stages, or in well-marked cases, it is deemed contagious within the meaning of the law. Therefore, in the administration of the law it is unnecessary and indeed uncalled for to make a microscopical examination of the sputum of arriving immigrants, but when an immigrant arrives with a well-marked case of tuberculosis of the lungs, properly confirmed by scientific examination, the propriety of rejecting him under the law is the same as for many other contagious diseases.

To obviate the possibility of a case of this kind being certified to the commissioners of immigration and consequent deportation by the latter without the fullest inquiry and the most experienced judgment available at the station, an order has been prepared directing that no such certification shall be made until after the case has been examined and certified to by the senior medical officer or the medical officer in charge of the medical division of the immigration station, provision also to be made for the reference of the case when circumstances demand to a board of not less than three medical officers if available, or if not, to specially appointed physicians specially qualified.

Practically the above principles are those which have heretofore been carried out. There was no new special order promulgated by this Bureau with regard to the contagiousness of pulmonary tuberculosis. The Bureau was simply asked by the Commissioner-General of Immigration whether tuberculosis of the lungs was a contagious disease, and the communication was answered by an indorsement thereon that it is considered a contagious disease; and, so far as known, there has been no great increase in the number of deportations on this account, these cases having been frequently returned before the said indorsement on the letter of the Commissioner-General of Immigration.

W. Wyman.

Appendix A.

[December 21, 1901.]

The following authorities class tuberculosis as a contagious or infectious disease and make no distinction between them, and, moreover, make no special classification termed "communicable:"

Osler, in his work on the practice of medicine.
Ziegler, in his work on pathology.
Green, in his work on pathology.
Wood and Fitz, in their work on practice of medicine.
Cullimore, in his monograph on tuberculosis.
Gould defines it as such in his dictionary.
Sternberg, in his work on bacteriology.
Tyson, in his work on the practice of medicine.

German:
Koch, in his address before the London Congress on tuberculosis.
Frankel, in an article on the prophylaxis of tuberculosis in the Berlin Klinische Wocheneschrift, 1899, volume 36.

French:
Grancher, professor of the faculty of medicine, in an article on prophylaxis of tuberculosis, published in the bulletin of the Academy of Medicine, 1898.
Landouzy, professor of the faculty of medicine, in an article on prophylaxis of tuberculosis, published in the Press Medical, 1898, volume 1.
Nocard, chief of the Government veterinary school at Val de Grace, treats it as an infectious disease in an article published in the Annals of the Pasteur Institute.
Proust, department of public health.
Borrel, of the Pasteur Institute, treats it as such in the Annals of the Pasteur Institute.
A decision of the Coseil d'Etat, March 18, 1898, classes tuberculosis among the contagious diseases.
Brouardel, professor of forensic medicine, treats it as such in his lectures.
Bertillon, in his Classification of Diseases, classes it under the head of general diseases, placing it with such diseases as smallpox, cholera, syphilis, yellow fever, etc.

APPENDIX B.

REPORT OF BOARD OF MEDICAL OFFICERS.

TREASURY DEPARTMENT,
OFFICE OF SUPERVISING SURGEON-GENERAL MARINE-HOSPITAL SERVICE,
Washington, December 7, 1901.

SIR: The board convened for the purpose of considering the case of Immigrant Boden, declared to be suffering from tuberculosis of the lungs by the medical officer in command, Ellis Island, N. Y., November 19, 1901, has the honor to submit the following comments upon the case and upon the question as to whether tuberculosis of the lungs is a dangerous contagious disease within the meaning of the act approved May 30, 1891:

Tuberculosis of the lungs is undoubtedly a communicable disease. In its early stages, when the foci of infection do not communicate with the bronchi and the bacilli are not, therefore, disseminated by expectoration, the disease is not contagious. Nearly all cases, however, sooner or later become contagious by reason of the bacilli reaching the bronchi.

It is the opinion of the board that a person having tuberculosis of the lungs in a well-marked form, and with bacilli in the sputum, should be certified as suffering from a dangerous contagious disease.

During the past few years there has been a great movement on foot in this country on the part of the medical journals and various organizations for the segregation of tuberculosis subjects, the prevention of expectoration in public conveyances and on public highways, and in other ways for the diminution of tuberculosis among the people in this country.

The Marine-Hospital Service has established a sanatorium for the segregation of tuberculosus subjects, because it is believed that the treatment of same in marine hospitals endangers the health of other patients. It is therefore not considered justifiable or expedient to alter the opinion expressed by the Bureau to the Commissioner-General of Immigration, under date of May 3, 1901, to the effect that tuberculosis of the lungs is now considered a contagious disease.

Immigrant Boden, having been clinically and bacteriologically shown to have tuberculosis, it is therefore believed that the Bureau should affirm the decision rendered by the surgeon in command at Ellis Island, N. Y.

Respectfully,

H. W. AUSTIN,
Surgeon, Marine-Hospital Service, Chairman.
L. L. WILLIAMS,
Surgeon, Marine-Hospital Service.
R. M. WOODWARD,
Surgeon, Marine-Hospital Service.

SURGEON-GENERAL UNITED STATES MARINE-HOSPITAL SERVICE.

DIVISION OF DOMESTIC QUARANTINE.

REPORT OF THE DIVISION OF DOMESTIC QUARANTINE.

By J. H. White,

Assistant Surgeon-General, Public Health and Marine-Hospital Service, in charge.

Plague in San Francisco.

From March 6, 1900, to the date of the last annual report (November 1, 1901) 50 cases and 46 deaths of plague were reported as having occurred in San Francisco, the last case dying October 30, 1901. Five of these cases were among white people, 4 were Japanese, and the remaining 41 were Chinese.

From November 1, 1901, to November 1, 1902, 39 cases (38 of whom died) have been reported, 1 a white man, the rest occurring in members of the Chinese race, as follows:

No.	Race.	Reported.	Died.	No.	Race.	Reported.	Died.
51	Chinese	Nov. 4, 1901	Nov. 4, 1901	71	Chinese	Aug. 31, 1902	Sept. 1, 1902
52	do	Dec. 12, 1901	(a)	72	do	Sept. 2, 1902	Sept. 2, 1902
53	do	Feb. 22, 1902	Feb. 22, 1902	73	do	Sept. 9, 1902	Sept. 9, 1902
54	do	Apr. 20, 1902	Apr. 20, 1902	74	do	Sept. 11, 1902	Sept. 11, 1902
55	do	May 19, 1902	May 19, 1902	75	do	Sept. 16, 1902	Sept. 16, 1902
56	do	May 25, 1902	May 25, 1902	76	do	do	Do.
57	do	May 29, 1902	May 29, 1902	77	do	Sept. 20, 1902	Sept. 20, 1902
58	do	July 13, 1902	July 13, 1902	78	do	Sept. 23, 1902	Sept. 23, 1902
59	do	July 18, 1902	July 18, 1902	79	do	do	Sept. 25, 1902
60	do	July 19, 1902	July 19, 1902	80	do	Sept. 26, 1902	Sept. 26, 1902
61	do	July 20, 1902	July 20, 1902	81	do	do	Do.
62	do	Aug. 6, 1902	Aug. 6, 1902	82	do	Oct. 4, 1902	Oct. 4, 1902
63	do	Aug. 17, 1902	Aug. 17, 1902	83	do	Oct. 5, 1902	Oct. 5, 1902
64	do	Aug. 19, 1902	Aug. 19, 1902	84	do	do	Do.
65	do	do	Do.	85	do	Oct. 7, 1902	Oct. 8, 1902
66	do	Aug. 20, 1902	Aug. 20, 1902	86	do	Oct. 11, 1902	Oct. 11, 1902
67	do	Aug. 22, 1902	Aug. 22, 1902	87	do	Oct. 16, 1902	Oct. 16, 1902
68	do	Aug. 28, 1902	Aug. 23, 1902	88	do	do	Do.
69	do	Aug. 25, 1902	Aug. 26, 1902	89	White	Oct. 28, 1902	Oct. 31, 1902
70	do	Aug. 30, 1902	Aug. 30, 1902				

[a] Recovered.

After the completion of the disinfection of the infected part of Chinatown in June, 1901, as described in the last annual report, it appeared possible for a time that plague had been successfully eradicated from San Francisco; but the recurrence of cases in July, 1901, was evidence that foci of infection remained in the city itself or that the city was subject to reinfection from some outside source. There occurred between July 1 and November 1, 1901, the date of the last report, 5 cases in July, 1 in August, 6 in September, and 5 in October. There appeared to be no marked spread of the disease, but during the year ending November 1, 1902, the date of this report, the record, as will be seen from the table, was as follows: November, 1901, 1 case; December, 1901, 1 case; January, 1902, none; February, 1; March, none; April, 1; May, 3; June, none; July, 4; August, 10; September, 10; October, 8. During the past year and to date of this report the Bureau has kept constantly in operation in the city of San Francisco, at 641 Merchant street, a thoroughly equipped bacteriological laboratory, to which is attached an executive office. In close proximity thereto the Bureau has also maintained a morgue for the necessary post-mortem examinations. Two commissioned medical officers of the Service, bacteriologists, have been on duty at this plague laboratory. These officers have, in conjunction with the local health authorities and with the aid of an intelligent Chinese interpreter, made daily and twice-daily inspections of Chinatown. Assistant Surgeon Currie has personally inspected Chinatown twice each day, accompanied by the interpreter, and has made all the bacteriological examinations. Asst. Surg. M. J. White has made the post-mortems and has transmitted by telegraph reports of new cases and the results of the bacteriological examinations, together with a weekly summary of the situation. Every death in Chinatown has been the subject of inquiry and of necropsy whenever deemed necessary. The discovery or the confirmation of a case of plague has been promptly reported by Doctor White to both the State and city boards of health as well as to the Bureau.

The difficulties connected with the work are set forth in the following extracts from the official reports received in the Bureau:

[Letter.]

PLAGUE LABORATORY,
San Francisco, Cal., December 26, 1901.

SIR: I have the honor to report that the opposition by the State authorities, the commercial interests, and the Chinese to our plague work here still continues, more solidly, perhaps, on the part of the latter than formerly, and surely no less on the part of the others. The cause of the last-mentioned opposition has been and is now a thorough apprehension that the quarantine measures which would likely be instituted would very materially injure their commerce, and any disposition on the part of the State authorities to make political capital out of this matter is based entirely upon this almost universally entertained belief.

The opposition of the Chinese is due chiefly to their fear of restricted personal freedom and the closing of their places of business by the enforcement of existing sanitary regulations.

Chinese persons exposed to the plague, in order to avoid detection, scatter over Chinatown and secrete themselves, as was done in the diphtheria cases reported in my letter of December 10; and while the plan of nonisolation of suspects could not be scheduled on the contention that it was perfectly safe, yet, in view of the fact that it is impossible to apprehend such suspects anyway, it might be safer to allay their opposition to detention, and thereby secure a daily inspection of them while attending to their business, for otherwise they might sicken and die before we could find them—hence a necessarily delayed and less effectual sanitation.

I have had several talks with the president and secretary of the city board of health, the city health officer, and bacteriologist, and have submitted to them for their consideration the following, to wit:

First. The promulgation of regulations or the passage of a supervisional ordinance embodying and securing the objects mentioned in the accompanying memorandum.

Second. Requiring death certificates from the attending physicians of that section, including the oriental, as a requisite for burial permit.

Third. In event that representation is made by relatives that the deceased did not receive medical attention, the case to be turned over to the coroner for investigation—a procedure that Chinese fear.

Fourth. That persons sick of the plague be immediately removed to some comfortable and suitable isolation room in Chinatown, and that all places that may be considered infected be immediately fumigated, and that no person be allowed to visit the patient without a written permit from the board of health.

Fifth. That measures for the destruction of rats by poison, traps, etc., be instituted, either under the immediate supervision of the board of health or, indirectly, by private contract, and that later this be applied to the entire city.

Sixth. That there be added to the regular death certificate the following: "And I further certify that the deceased had no acute inflammatory adenitis."

With respect to the extermination of rats, I believe it advisable to employ a Chinaman to do this work under contract and in any way he may choose, because the plan that it would be found convenient to suggest to him is the lottery system.

The position of this office will continue to be, until otherwise directed, that the sanitary measures "should include inspection, isolation, and disinfection as in smallpox (in the same manner)."

* * * * * * *

Notwithstanding the active opposition the sanitary work here has been of distinct value, and as the opposition abates and the other infected sections are appropriately attended more satisfactory results may be confidently expected. Each day we are gaining little by little, and in due time I believe we will reach the other presumably infected sections.

Respectfully,

M. J. WHITE,

Assistant Surgeon, Marine-Hospital Service, in Command.

SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

[Telegrams.]

SAN FRANCISCO, CAL., *January 11, 1902.*

Surgeon-General WYMAN,
Washington, D. C.

Chinese Six Companies, upon advice of Judge McGuire, will endeavor to hereafter prevent special plague examination by local board of health and Treasury Department. State board probably instigates. Outlook for local authorities in this and in Huey Jin's case returnable January 13 favorable.

WHITE.

SAN FRANCISCO, *January 13, 1902.*

Surgeon-General WYMAN,
Washington, D. C.:

Regarding matter mentioned in my telegram January 11, the president of the local board of health decided to inspect dead at residences, requiring removal to morgue of only suspicious cases, until meeting local board of health January 15. Await letter; it will explain everything. Judge postpones case Huie Jin January 20; pressure business. Will probably be released this week.

WHITE.

[Letter.]

UNITED STATES PLAGUE LABORATORY,
San Francisco, Cal., January 14, 1902.

SIR: I have the honor to report that Huie Jin, who was placed in quarantine on December 12, 1901, at 1025 Dupont street by the city board of health, was this day released from quarantine, having recovered, and the room in which he was detained fumigated with sulphur.

The order to show cause, issued by Judge Morrow, will be called for the third time on Monday, January 20, but of course can not now come up.

Respectfully,

M. J. WHITE,

Assistant Surgeon, Marine-Hospital Service, in Command.

SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

Other correspondence received in the Bureau throughout these months shows opposition on the part of the governor and the State board of health to measures, the prosecution of which would be acknowledgment of the existence of plague, and that the city board of health was not only embarrassed by lack of funds but by the antagonism of the newly elected mayor, who endeavored to remove the members of the board from office and establish a new city board of health. In this, however, the mayor was unsuccessful, being restrained by legal injunction.

The increase of cases in August, September, and October (1902), gave rise to apprehension on the part of the Bureau, and two memoranda were prepared for the consideration of the Secretary of the Treasury, one narrating the history of the plague to date and the other relating to the more radical attitude which it might be possible for the National Government to assume under existing laws; and it was determined, after conference with the Secretary of the Treasury, that the Public Health and Marine-Hospital Service should perform its duty in the same manner as heretofore.

In view, however, of the repeated and persistent rumors of the probable infection of localities in California outside of Chinatown, San Francisco, notwithstanding the fact that a number of the same had been inspected without result, it was deemed necessary to provide for a thorough and systematic inspection of all suspected places. Accordingly, in the latter part of September, Surg. A. H. Glennan, who was then acting as chief quarantine officer for the island of Cuba, was directed to report at the Bureau and shortly thereafter detailed for this special duty. His letters of instruction and a few reports from him are subjoined. At the date of this report, having made the necessary preliminary arrangements, he is actively engaged in the prosecution of this work.

[Letter detailing Surgeon Glennan.]

Treasury Department,
Bureau of Public Health and Marine-Hospital Service,
Washington, October 4, 1902.

Sir: You are hereby relieved from duty in Habana and from command of the service in the island of Cuba and also from special temporary duty in the Bureau, and detailed for special temporary duty on the Pacific coast as inspector of quarantine and marine-hospital stations.

You will first proceed to San Diego, Cal., and inspect the national quarantine station at that port and the marine-hospital station in the city of San Diego. The sequence in the inspection of the other stations shall be such as seems to you to be most desirable and practicable.

You will provide yourself with all the necessary blanks for your reports, and will keep the bureau informed of your movements by letter or telegram in such manner that you may be communicated with at any time.

Respectfully,

Walter Wyman,
Surgeon-General.

Surg. A. H. Glennan,
Public Health and Marine-Hospital Service, Washington, D. C.

[Letter of instructions.]

Treasury Department,
Bureau of Public Health and Marine-Hospital Service,
Washington, October 4, 1902.

Sir: Referring to bureau letter of this date detailing you as inspector of the quarantine and marine-hospital stations on the Pacific coast, you are further directed and informed as follows:

As soon as possible after your inspection at San Diego, you will call upon his excellency Henry T. Gage, governor of California, and present the following matter for his consideration, viz: That there have been reported to the Bureau 18 deaths from bubonic plague in San Francisco during the months of August (9) and September (9), and that from the reports received during these months and prior thereto there are indications that three of the cases within the present year may have been brought into San Francisco from other places. This and the increased number of cases reported in San Francisco make it desirable that a careful inquiry be made with regard to several localities.

From former expressions the bureau feels assured that the governor will approve of this measure, and may designate a representative to cooperate with a bureau representative in making these inquiries.

After consultation with the governor you will report to the Bureau as to any arrangements which may be effected.

In the opinion of the Bureau this inquiry should be conducted in a deliberate and thorough manner, without haste or agitation, and the findings should be fortified by bacteriological examination. Furthermore, the inquiry should be so conducted that in the possible event of affirmative findings, nothing done during the inquiry would prove an embarrassment in the prolonged measures of extirpation which would be necessary; for it should be remembered that in the eradication of the disease, the measures relating thereto, while they need not be of a character to disturb business or cause excitement among the people, must be very thorough, continuous, and of probable long duration.

Respectfully,

WALTER WYMAN,
Surgeon-General.

Surg. A. H. GLENNAN,
Public Health and Marine-Hospital Service, Washington, D. C.

List of places: Fresno, Oakland, Berkeley, Davisville, Bouldins Island, Sacramento, Stockton; also Jan Jose and Alameda.

Surgeon Glennan is now in California arranging with the governor for an inspection of the places named in the above list, and a satisfactory agreement seems probable, as shown by the following correspondence:

[Telegram.]

LOS ANGELES, CAL., *October 16, 1902.*

Surgeon-General WYMAN,
Washington:

According to instructions, have had a consultation with the governor. Can arrange investigation. The governor agrees to send a representative of the State board with me to examine health conditions in outside towns, doctor to be selected. The governor expects to be in San Francisco about —— and fix newspapers avoid publicity. It may be a few days before can do this. Probably not advisable to press the matter until November 4 unless absolutely necessary. This is the best that can be done at present. Shall remain here few days, and then go to San Francisco. Will arrange to meet governor upon arriving there.

GLENNAN.

[Letter.]

SAN FRANCISCO, CAL., *October 21, 1902.*

SIR: Complying with your letter of instructions dated October 4, 1902, that as soon as possible after inspections at San Diego to call upon Governor Henry T. Gage and present certain matters for his consideration, I have to report that I arrived at San Diego Friday night, October 10, 1902, completed those duties, and reached Los Angeles Tuesday night, October 14, 1902.

Governor Gage resides upon his ranch at Downey, a short distance from Los Angeles, and has offices in the California Bank building. I saw him immediately the following morning, and arranged a conference for Thursday morning.

He received me pleasantly, read your letter of introduction, with that of instructions to me, and seemed pleased to hear from you. * * *

I said to him that if matters grew serious in the future his administration would be censured if it could be shown that reasonable precautionary measures had not been taken; also that the State health officer of Texas has, in his annual report just published, called the attention of Governor Sayers to the serious plague situation in California, etc. This gave the governor serious thought. After stating that he believed that the disease was a syphilitic septicæmia, or a pseudo-plague, he was convinced of our sincerity, and stated that he would render every aid possible, and designate a State agent to accompany me to represent him in the investigation. * * *

Finally he advised that I confer with Doctor Mathews, the secretary of the State board, to say to him that he (Gage) was willing to cooperate with Surgeon-General Wyman and myself. * * *

While in Los Angeles I met Dr. Stanley P. Black, pathologist and bacteriologist to the University of Southern California Medical College, entirely devoted to the work, and who has had practical study in Europe. He informed me that some time ago Doctor Anderson, member of the State board in San Francisco, sent him a culture which he stated was plague without doubt. Together with him, I spent Sunday morning in the office of Dr. L. M. Powers, city health officer, located in the city hall, going over the mortuary records for the past year.

There are about 4,000 Chinese in Los Angeles, living in fair above-ground quarters, somewhat scattered, many of whom are laborers on neighboring ranches. Several American physicians have their confidence and attend them in sickness. The deaths number 4 to 5 a month, or between 50 and 60 a year, without much variation. Causes of death are given in most cases as tubercle of lung, but I pointed out a few cases of pneumonia and pulmonary congestion to Doctor Powers. He stated that the coroner sees all these cases, but that he would have Doctor Black make a bacteriological investigation in all future cases, as was done some time ago. Both these gentlemen are professionally and personally reliable, and can be addressed by the Bureau in any emergency.

Respectfully, A. H. GLENNAN, *Surgeon.*

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Telegrams.]

SAN FRANCISCO, CAL., *October 24, 1902.*

Surgeon-General WYMAN,
Washington, D. C.:

Wrote you yesterday. Have had consultation with secretary State board of health. Has no objection quietly investigate rumor with the surrounding country. Like some others, believes unable to confirm diognosis by bacteriological examination. He sends statement meeting of State boards, October 28, New Haven, at request of Doctor Fulton, of Baltimore, when plague will be discussed. Advise Service representative be there with facts. Souchon here, presumably private business, returned New Orleans to-day. Mayor is in New York.

GLENNAN.

SAN FRANCISCO, CAL., *October 28, 1902.*

Surgeon-General WYMAN,
New Haven House, New Haven, Conn.:

Outlook favorable for cooperation and smoothing situation. No cases since 16th. Obtaining confidential information. Glad you personally attended State boards' meeting.

GLENNAN.

ABSENCE OF YELLOW FEVER IN THE UNITED STATES.

It is a source of much gratification to be able to report that during the fiscal year just ended there has been no yellow fever within the limits of the United States, and, with the exception of one solitary instance, which upon investigation proved to be not this disease, there has been no case suspected of being yellow fever.

SMALLPOX IN THE UNITED STATES—AID TO STATE HEALTH AUTHORITIES.

In a previous portion of this report, under the heading, "Division of sanitary reports and statistics," has been shown the number of

States and Territories in which smallpox prevailed, giving the number of cases and deaths in each, so far as the same have been reported to the Bureau. In accordance with the established custom of the Service, aid has been rendered during the past year to various State and local boards of health upon their request, both in the diagnosing and in the suppression of smallpox in several States.

Services of this character, involving also the personal detail of expert officers of the Service, were rendered in the States of Georgia, Tennessee, Michigan, Nebraska, Iowa, and Virginia, and the reports of the officers mentioned may be found printed in Public Health Reports for 1901 and for 1902.

The following report, not hitherto published, relating to Service counsel at Des Moines, Iowa, is inserted here as giving a fair idea of the character of the assistance given by Public Health and Marine-Hospital Service officers.

SMALLPOX AT DES MOINES, IOWA.

MILWAUKEE, WIS., *February 14, 1902.*

SIR: I have the honor to make the following report on the smallpox situation at Des Moines, Iowa: In conformity to your order of the 10th instant, I arrived at Des Moines on the morning of the 12th, and immediately called upon Doctor Kennedy, secretary of the State board of health, whom I found at the capitol in consultation with Dr. F. M. Powers, also a member of the board. Doctor Powers had personally investigated the situation, and gave me many valuable points relative to the widespread condition of the disease and the probable number of cases then existing in the city. His estimate, based on a careful inquiry, placed the number of cases at 900. Later, the same day, I called on Dr. L. M. Schooler, the postmaster, and on Dr. N. C. Schiltz, the city physician, and with them went over the situation in detail. In the company of these gentlemen I made the rounds of many of the private houses that are now quarantined. There were 180 such places bearing the smallpox placards scattered throughout the city. The largest number of them are to be found in the poorer sections, the east and south sides. It should be stated though that all sections of the city have been visited by the disease. A department store had 3 cases among the employees; 4 clerks of an insurance company were stricken, and there have been many cases among barbers and servants at the hotels. These cases are cited to show that the business centers have been invaded. My inspection of these houses revealed a rather discouraging state of affairs. The three essentials to a proper management of a smallpox epidemic, namely, vaccination, isolation, and disinfection had not been strictly enforced. A lack of funds, and of authority, are undoubtedly the main reasons for these unwholesome conditions. In all the quarantined houses visited by me, there were unvaccinated people—men, women, and children—in actual daily contact with smallpox patients. Some of them were opposed to the theory of vaccination, but the majority were quite willing to accept it, as I found on inquiry. It is proper to state here that there are no compulsory vaccination laws in the State of Iowa. The force of patrolmen employed to guard these houses and prevent the breaking of quarantine is totally inadequate for the amount of work required. In fact, I saw only four or five during the whole time of my inspection. Too much has been expected from the smallpox placards placed on the premises. In two of the houses I noticed that letters had been written and were ready for the post. There had been no thought of disinfection of these letters on the part of anyone. On account of the mild type of the disease many of the people are not satisfied that it is smallpox, and are very careless in consequence. All the cases have not been mild in type. There have been four or five deaths since the 1st of January. At the smallpox hospital I saw quite a number of serious cases of the confluent variety. The building now in use as a smallpox hospital is not owned by the city. It is merely rented to meet the emergency, and will be given up as soon as the larger and more substantial one already contracted for is completed. It will accommodate conveniently only about 50 patients, though at the time of my visit there were 70 cases housed within its walls.

From a thorough canvass of the situation I have arrived at the conclusion that there must be easily 700 cases of variola within the city limits; that the foci of contagion are to be found in all sections, and that there are many unreported cases of the disease among the better classes of people. Dr. E. E. Dorr, the only medical member of the council, shares in this opinion. He belives that there are fully 1,000 cases of the disease in the city at this time. To protect the public health in other sections of the country I believe that a disinfection of the outgoing mails is necessary. It remains, then, to devise a convenient and efficient method of performing the work. Doctor Schooler, the postmaster, claims that with his present help a congestion and much delay will ensue if all classes of mail are to be fumigated with sulphur dioxide at the post-office. It seems to me that an efficient and quick disinfection can be obtained by the use of any one of the formaldehyde apparatuses to be found in the market. The board of health has a large outfit of reliable machines of this class. Sulphur dioxide will injure certain classes of mail, such as milliners' goods and fabrics from the department stores that are often sent through the post-office. For large business establishments having only vaccinated employees some special arrangements can be made with the board of health to supervise a disinfection at their places of business. Such an arrangement would prevent a congestion of mail at the post-office and would allay much of the objection that may be raised. It does not seem necessary to disinfect newspapers and other printed matter direct from the presses.

It is not easy to understand how a people of as progressive a city as Des Moines undoubtedly is would supinely await the development of such an unfavorable sanitary condition.

Here are some of the points to be considered in this connection. There has been much erroneous teaching with reference to vaccination, its danger, etc. I found here a widespread belief in a dangerous fallacy, namely, that immunity to variola can be conferred by the internal adminstration of a pill. This has been the practice of some of our homeopathic citizens, who have a considerable following, and whose certificates of "vaccination," made after the pill method, have been accepted at some of the schools. It is gratifying to note that this danger has been obviated by a resolution of the council which provides that all vaccinations shall be by the inoculation method. Then the usual mistakes in diagnosis have been made by the profession, due, no doubt, to the mildness of the type. This can not be said of the physicians in authority, for they recognized the disease when it first began, nearly two years ago, and have followed it throughout its gradual development. Much has been said of the failure of the town council, or more properly speaking, the majority vote of the council, to see the danger of the situation and to pass.ordinances that would empower the mayor and city physician to act. The council is also the board of health, and as this body has only one physician among its members it is not difficult to understand the lack of cooperation among them.

To judge from the number of public meetings and conferences of the city council held within the last two days, and the number of resolutions passed, I would say that the people had at last arrived at a realizing sense of the gravity of the situation. By request of the mayor and members of the board of health I attended oneof these meetings and was called upon to give my opinion as to the needs of the occasion. This conference had a very happy result. Considerable authority and ample funds were voted the mayor, and he was requested to at once institute vigorous measures for the suppression of the epidemic. This work will begin to-day under the direction of Doctor Schiltz, a thoroughly competent physician. I have no doubt but that within two weeks' time many good results will show from the systematic efforts put forth.

I append herewith a set of resolutions passed by the council at one of the meetings. Since this meeting the mayor has been given still larger powers and greater encouragement from the business men.

In closing I beg to state that I am indebted to the mayor, the postmaster, the physicians, and citizens generally for very courteous treatment while in the city of Des Moines.

Respectfully,

RUPERT BLUE,
Passed Assistant Surgeon, Public Health and Marine-Hospital Service.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

Resolutions adopted by town council February 13, 1902.

That all school boards of this city are hereby directed to prohibit the attendance at school of any child, teacher, or employee of said schools, unless they have a certificate from a reputable physician showing that they have had a successful vaccination by inoculation within the past two years.

That the mayor be, and is hereby, directed and instructed to hire all necessary guards or patrolmen to properly quarantine smallpox cases.

That the city clerk notify all managers of business colleges, all schools and colleges, private, parochial, or otherwise, to prohibit the attendance of pupils or attendants of the school from participation in the exercises of the schools, except upon showing a certificate from a reputable physician that such person has been vaccinated within two years.

Also that all business, hotels, and boarding houses be requested that all employees be vaccinated who can not furnish a certificate of successful vaccination within two years.

That all churches, theaters, and lodges be ordered closed until further notice.

That all members of the police and fire departments be included in the vaccination order, and that all public gatherings and political meetings be prohibited.

That all vaccination shall be by inoculation.

J. J. HARTENBORNER,
Mayor of Des Moines, Iowa.

Resolution on part of citizens.

Resolved by the business men of Des Moines, That they urge upon the board of health of the city of Des Moines immediate and decisive action toward the employment of every possible means for the elimination of smallpox from Des Moines, including the employment of patrolmen and physicians, without regard to any expense reasonably necessary.

J. G. OLMSTED,
W. B. HEDGE,
GEORGE WHITE,
THE UTICA CLOTHING CO.,
LEDERER, STRAUSS & CO.,
(and 100 others).

CRANEY ISLAND.

The assistance of the Bureau to the State of Virginia during the past year consisted principally in the use of Craney Island, a small island in the vicinity of Norfolk and Portsmouth. Mention of this island was made in the annual report for 1899, page 646, when it was used for the holding of suspects during the yellow-fever epidemic at the National Soldiers' Home, Hampton, Va.

In a letter from the Secretary of the Treasury to the Secretary of the Navy, April 24, 1899, the transfer of this island to the Treasury Department for the use of the Marine-Hospital Service was requested, and further explanation of the wishes of the Treasury Department in the matter were made in a letter of May 25, 1899, addressed by the Secretary of the Treasury to the Secretary of the Navy.

In a letter from the Navy Department, June 2, 1899, signed by the Acting Secretary, Craney Island was transferred to the Treasury Department for the use of the Marine-Hospital Service, notice being given that the commandant of the navy-yard at Norfolk had been authorized to transfer said island and the buildings thereon upon application of the proper officials of the Treasury Department or Marine-Hospital Service, the transfer being "until such time as it may be required for use by this (Navy) Department, with the understanding that the State and county authorities shall be allowed, if they so desire, to there isolate contagious and infectious diseases under the supervision of the Marine-Hospital Service."

As may be seen by subsequent correspondence on file in the Bureau, the city of Norfolk has been authorized to use a certain portion of the island and the city of Portsmouth the other portion, and, with the assent of the Navy Department, previously obtained, alterations and improvements to the buildings have been made, the agreement with the authorities of each city being that the island, or the respective portions of the island, should be returned whenever such return should be demanded by the Marine-Hospital Service.

NATIONAL QUARANTINE STATIONS.

CARE AND PRESERVATION OF QUARANTINE STEAMERS.

During the past year there has been prepared and issued to the domestic quarantine stations, and also to the quarantine stations in our insular possessions, a book of instructions relative to the care and preservation of quarantine steamers.

As stated in the letter of transmittal, dated August 1, 1901, the instructions were issued to prevent neglect upon the part of masters and engineers in the laying up of steamers at the close of the quarantine season or carelessness or indifference to details while in commission. The book contains special instructions relative to the duties of the medical officer in command in respect to the steamer; special instructions to the masters and pilots and special instructions to the engineers, and provides for a ship's log book to be kept by the master or pilot and retained aboard the vessel; a blank form for abstract of the ship's log book, to be transmitted to the Bureau at the end of each month; an engineer's journal, to be kept in duplicate, one copy to be retained on the steamer and the other transmitted to the Bureau at the end of each month. It further provides for a monthly report of inspection of the steamer, to be signed by the medical officer in command, the master or pilot, and the engineer and transmitted to the Bureau. These reports give to the Bureau all necessary information concerning the vessel, and are an indication either of care or neglect, and furnish a method of promptly calling attention to and correcting any neglect and insisting upon such repairs or additional care as may be necessary.

FLORIDA QUARANTINE STATIONS.

As set forth in the last annual report, under the provisions of the act of February 15, 1893, the Service took over on August 1, 1901, the quarantine functions of the State of Florida. This arrangement was arrived at after some correspondence and several conferences with the health authorities and the governor of the State of Florida.

These stations, the reports of which appear in the general reports of transactions at national quarantine stations, are of prime importance as a continuation of the national line of defense against the admission of yellow fever into the United States, coming as they do nearer to the centers ordinarily infected with yellow fever than any other ports in the United States.

The stations were taken over under an agreement that provided for the leasing of the stations at a nominal sum until appropriation could be made for the purchase of the same. The necessary appropriations were provided for in the act of Congress approved June 28, 1902, and it is expected that the purchase will soon be consummated.

TRANSACTIONS AT NATIONAL QUARANTINES.

Summary of work done at national quarantines for the fiscal year ended June 30, 1902.

Name of station.	Vessels.		Number inspected.		Remarks.
	Inspected.	Disinfected.	Crew.	Passengers.	
Portland, Me	8	0	337	3	Full station.
Reedy Island	1,105	6	36,269	22,703	Do.
Delaware Breakwater	113	0	3,126	83	Do.
Alexandria, Va	17	0	148	11	
Cape Charles	402	12	18,916	4,144	Do.
Washington, N. C	1	0	6	0	
Newbren, N. C	0	0	0	0	
Cape Fear	60	6	1,091	3	Do.
Savannah	270	50	6,530	40	Do.
South Atlantic	22	14	557	2	Do.
Brunswick	187	25	2,286	20	Do.
Cumberland Sound	197	18	3,426	0	Do.
St. Johns River	155	2	1,472	67	
Biscayne Bay	197	6	5,224	4,064	Do.
Key West	187	37	15,078	9,488	Do.
Boca Grande	39	0	501	0	
Puntarasa	0	0	0	0	
Tampa Bay	250	16	3,742	198	Do.
Cedar Keys	195	0	1,656	0	
St. George Sound	66	1	....	....	
Apalachicola	4	0	....	....	
Santa Rosa	280	80	4,622	79	Do.
Pascagoula, Miss	155	0	1,312	0	
Gulf	117	103	2,883	46	Do.
San Diego	145	2	2,371	1,644	Do.
Los Angeles, Cal	35	0	1,213	18	
San Pedro, Cal					
San Francisco, Cal	927	15	58,777	63,970	Do.
Eureka, Cal	25	2	802	18	
Columbia River	161	0	4,549	649	Do.
Hoquiam, Wash	37	0	....	....	
Port Townsend, Wash	699	39	26,526	23,382	Do.
Port Angeles, Wash					
Seattle, Wash					
Tacoma, Wash					
Nome, Alaska	105	2	....	....	Do.
Dutch Harbor, Alaska	12	0	....	....	

The transactions of the 37 domestic quarantine stations embraced in the national system at the present time are shown in the following reports of the officers in command of these stations:

PORTLAND, ME.

[Portland quarantine; post-office address, Portland, Me.]

[Report of the medical officer in command, Surg. P. C. Kalloch. Assumed command under official orders of December 27, 1901.]

PORTLAND QUARANTINE, *July 1, 1902.*

SIR: I have the honor to inclose a schedule of the transactions at the Portland quarantine for the year ending June 30, 1902.

This work was assumed by the Service in January last, thus superseding the local health authorities.

Estimates were made for the construction of a disinfecting plant, including the cost of purchasing the north end of House Island, upon which the station was to be located. In the meantime the inspection of vessels from foreign ports, in accordance with the Treasury quarantine regulations, was begun, the quarantine officer also assuming, under orders of the Bureau, the inspection of immigrants. The lack of any satisfactory arrangement for the disinfection of vessels, should cases of infectious disease occur on board, makes it seem desirable that a suitable plant should be constructed as early as possible. A small steamer for the boarding of vessels is also much needed.

Respectfully,

P. C. KALLOCH,
Surgeon, Public Health and Marine-Hospital Service.

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

Transactions at Portland National Quarantine Station for the year ending June 30, 1902.

[Quarantine inspection by the Marine-Hospital Service, begun January 14, 1902.]

	Jan.	Feb.	Mar.	Apr.	May.	June.
Vessels spoken and passed	0	0	0	0	0	0
Steamers inspected and passed	5	14	11	6	4	6
Steamers disinfected	0	0	0	0	0	0
Sailing vessels inspected and passed	....	....	....	1	2	2
Sailing vessels disinfected	0	0	0	0	0	0
Crew on steamers	220	625	626	400	245	314
Crew on sailing vessels	....	....	....	8	14	23
Passengers on steamers	0	146	392	874	153	3
Passengers on sailing vessels	0	0	0	0	0	0
Cattlemen on steamers	36	93	164	69	29	86
Stowaways on steamers	2	0	9	4	4	1

REEDY ISLAND, DELAWARE.

[Reedy Island Quarantine post-office address, via Port Penn, Del.]

[Report of the medical officer in command, Asst. Surg. T. F. Richardson. Assumed command under official orders of November 24, 1899.]

REEDY ISLAND QUARANTINE, *July 1, 1902.*

SIR: I have the honor to inclose herewith annual report of transactions at this station for the year ending June 30, 1902.

Respectfully,

T. F. RICHARDSON,
Assistant Surgeon, Public Health and
Marine-Hospital Service, in Command.

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

Transactions at Reedy Island National Quarantine Station for the year ending June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	0	0	0	0	0	0	2	4	5	0	0	0	11
Steamers inspected and passed	93	82	88	63	73	78	73	60	74	85	106	90	965
Steamers disinfected	2	0	0	1	0	0	1	0	0	1	0	1	6
Sailing vessels inspected and passed	8	19	21	7	12	10	6	0	8	15	13	21	140
Sailing vessels disinfected	0	0	0	0	0	0	0	0	0	0	0	0	0
Crew on steamers	3,120	2,947	3,321	2,857	2,709	2,840	2,657	2,222	2,760	2,978	3,148	3,143	34,196
Crew on sailing vessels	107	272	264	121	193	140	111	0	130	262	186	309	2,073
Passengers on steamers	1,374	1,937	1,801	1,525	1,003	1,326	934	1,209	1,952	2,645	3,008	3,978	22,692
Passengers on sailing vessels	0	0	5	0	0	0	0	0	0	0	0	6	11

DELAWARE BREAKWATER.

[Delaware Breakwater Quarantine post-office address, via Lewes, Del.]

[Report of the medical officer in command, P. A. Surg. C. H. Lavinder. Assumed command under official orders of March 8, 1901.]

Transactions at the Delaware Breakwater National Quarantine Station for the year ending June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	0	1	0	1	0	0	0	0	0	0	0	0	2
Steamers inspected and passed	8	16	16	21	3	2	2	3	2	6	8	2	89
Steamers disinfected	0	0	0	0	0	0	0	0	0	0	0	0	0
Sailing vessels inspected and passed	2	2	3	0	2	5	1	5	4	4	2	4	24
Sailing vessels disinfected	0	0	0	0	0	0	0	0	0	0	0	0	0
Crew on steamers	223	429	462	653	76	64	49	82	72	146	223	118	2,597
Crew on sailing vessels	33	39	80	0	23	70	8	99	58	35	17	66	529
Passengers on steamers	14	2	6	0	2	0	0	0	43	11	3	1	82
Passengers on sailing vessels	0	0	0	0	1	0	0	0	0	0	0	0	1

C. H. LAVINDER,
Passed Assistant Surgeon, Public Health and Marine-Hospital Service.

ALEXANDRIA, VA.

[Report of Acting Asst. Surg. Arthur Snowden, in charge.]

Transactions at Alexandria (Va.) National Quarantine Station for the year ending June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	......	......	......	......	......	......	......	......	......	......	......	......	......
Steamers inspected and passed	......	......	......	......	......	......	......	......	......	......	......	1	1
Steamers disinfected	......	......	......	......	......	......	......	......	......	......	......	......	......
Sailing vessels inspected and passed	5	2	2	2	......	1	......	......	......	......	2	2	16
Sailing vessels disinfected	......	......	......	......	......	......	......	......	......	......	......	......	......
Crew on steamers	......	......	......	......	......	......	......	......	......	......	......	14	14
Crew on sailing vessels	38	21	23	15	......	6	......	......	......	......	17	14	134
Passengers on steamers	......	......	......	......	......	......	......	......	......	......	......	......	......
Passengers on sailing vessels	4	2	......	......	......	......	......	......	......	......	2	3	11

CAPE CHARLES.

[Cape Charles Quarantine; post-office address, Fortress Monroe, Va. Boarding and disinfection ship Jamestown, Hampton Roads; hospitals and detention barracks, Fisherman's Island, off Cape Charles, Virginia.]

[Report of the medical officer in command, Asst. Surg. C. W. Wille. Assumed command under official orders of September 12, 1901.]

Cape Charles Quarantine,
Fortress Monroe, Va., July 2, 1902.

Sir: I have the honor to transmit herewith annual report of transactions at Cape Charles Quarantine Station for the fiscal year ending June 30, 1902.

Respectfully,

C. W. Wille,
Assistant Surgeon, Public Health and Marine-Hospital Service, in Command.

The Surgeon-General Public Health and Marine-Hospital Service.

Transactions at Cape Charles National Quarantine Station for the year ending June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	2	......	......	1	......	......	......	......	......	1	1	......	5
Steamers inspected and passed	40	48	30	41	23	30	27	19	23	17	34	29	361
Steamers disinfected	......	2	......	2	1	1	1	......	......	......	......	2	9
Sailing vessels inspected and passed	8	......	1	3	2	4	5	......	2	5	5	6	41
Sailing vessels disinfected	......	......	......	......	......	......	......	......	3	......	......	......	3
Crew on steamers	1,246	1,414	939	1,283	1,653	1,613	1,539	596	1,005	1,868	4,296	1,028	18,476
Crew on sailing vessels	61	......	6	44	35	55	41	......	66	45	41	46	440
Passengers on steamers	113	104	76	129	129	94	86	46	481	1,333	1,391	147	4,129
Passengers on sailing vessels	3	......	......	......	......	2	......	......	6	3	......	1	15

CAPE FEAR.

[Cape Fear Quarantine Station; post-office address, Southport, N. C.]

[Report of the medical officer in command, Asst. Surg. T. B. McClintic. Assumed command under official orders of March 8, 1900.]

Cape Fear Quarantine Station,
Southport, N. C., July 1, 1902.

Sir: In compliance with that portion of Bureau letter of May 27, 1902, directing a report of transactions at this station for the year ending June 30, 1902, I have the honor to submit the following report:

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	0	0	1	2	0	0	0	0	0	0	0	0	3
Steamers inspected and passed	3	2	6	8	2	4	1	0	1	1	0	2	30
Steamers disinfected	0	1	1	0	0	0	0	0	0	0	0	0	2
Sailing vessels inspected and passed	2	0	1	2	1	6	5	6	2	2	2	1	30
Sailing vessels disinfected	0	1	0	1	0	0	1	0	1	0	0	0	4
Crew on steamers	98	70	184	205	48	99	26	0	17	21	0	41	809
Crew on sailing vessels	15	13	12	18	7	57	49	39	25	18	21	8	282
Passengers on steamers	0	0	0	2	0	0	1	0	0	0	0	0	3
Passengers on sailing vessels	0	0	0	0	0	0	0	0	0	0	0	0	0

Of the number of vessels disinfected 1 was for smallpox, 2 for plague, and 3 for yellow fever. All were in ballast and were detained for observation a total of forty-three days. The only case of sickness arriving at this station during the year was a case of smallpox aboard the Swedish bark *Anders* from Valencia, Spain. All hands were vaccinated, the vessel disinfected, and after twelve days' observation granted free pratique, all hands being well and the vaccination having all been successful.

Respectfully,

T. B. McCLINTIC,
Assistant Surgeon, Public Health and Marine-Hospital Service.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

SAVANNAH.

[Savannah quarantine, Savannah, Ga. Report of the medical officer in charge, Acting Asst. Surg. W. J. Linley.]

SAVANNAH QUARANTINE,
Savannah, Ga., July 2, 1902.

SIR: In compliance with instructions received in Bureau letter dated May 29, 1902, I have the honor to transmit the inclosed table of transactions at this station for the fiscal year ending June 30, 1902. The remaining reports will be transmitted as soon as certain estimates can be obtained.

Respectfully,

WM. J. LINLEY,
Acting Assistant Surgeon, Public Health and Marine-Hospital Service.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

Transactions at the Savannah (Ga.) National Quarantine Station for the year ending June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	0	0	0	0	0	0	0	0	0	0	0	0	0
Steamers inspected and passed	6	9	18	18	21	20	18	8	6	9	11	8	152
Steamers disinfected	0	0	2	3	4	0	1	0	1	0	0	2	13
Sailing vessels inspected and passed	7	16	6	12	8	19	13	2	13	6	6	10	118
Sailing vessels disinfected	4	1	1	5	0	3	1	4	3	4	6	5	37
Crew on steamers	155	229	543	605	722	538	564	256	191	275	279	281	4,638
Crew on sailing vessels	124	215	82	209	101	279	156	63	209	125	147	182	1,892
Passengers on steamers	0	0	1	3	5	2	0	0	0	1	3	7	22
Passengers on sailing vessels	3	1	1	0	1	1	0	2	1	2	3	3	18

SOUTH ATLANTIC.

[South Atlantic Quarantine; post-office address, Inverness, Ga.; telegraphic address, via Darien, Ga.]

[Report of the medical officer in command, Asst. Surg. G. M. Corput. Assumed command under official orders of November 25, 1901.]

SOUTH ATLANTIC QUARANTINE, VIA INVERNESS, GA., *July 1, 1902.*

SIR: In compliance with Bureau letter of May 29, 1902, I have the honor to forward herewith report of vessels detained and of vessels inspected and passed at this station during the fiscal year ended June 30, 1902.

Respectfully,

G. M. CORPUT,
Assistant Surgeon, Public Health and Marine-Hospital Service.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

Transactions at South Atlantic National Quarantine Station for the year ending June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	......	......	1	......	......	......	......	......	......	......	......	1	2
Steamers inspected and passed	......	1	......	......	......	......	......	1	......	1	1	2	6
Steamers disinfected	......	......	......	......	1	......	......	......	......	......	......	1	2
Sailing vessels inspected and passed	1	1	......	2	1	2	1	1	5	1	1	......	16
Sailing vessels disinfected	2	1	2	1	2	......	......	1	2	......	1	......	12
Crew on steamers	......	24	......	......	29	......	......	20	......	26	24	74	197
Crew on sailing vessels	45	25	22	43	40	29	14	15	82	14	31	......	360
Passengers on steamers	......	0	......	......	0	......	......	0	0	......	0	0	0
Passengers on sailing vessels	0	0	0	0	0	......	......	0	1	......	1	......	2

SOUTH ATLANTIC QUARANTINE, VIA INVERNESS, GA., *July 1, 1902.*

SIR: I have the honor to submit the following report of transactions at this station during the fiscal year ended June 30, 1902:

Two steamships and 11 sailing vessels have been disinfected and detained; 6 steamships and 17 sailing vessels have been inspected and passed; 1 steamship has been spoken and passed.

The total tonnage of steam vessels disinfected was 6,349 tons; the total tonnage of steam vessels inspected and passed was 10,233 tons.

The total tonnage of sailing vessels disinfected was 7,593 tons; the total tonnage of sailing vessels inspected and passed was 13,614 tons.

One thousand tons of stone ballast and 1,100 tons of sand and rubbish ballast have been discharged.

Of the vessels disinfected at this station, 7 sailing vessels and 1 steam vessel were bound for Brunswick, Ga., 2 sailing vessels and 1 steam vessel were bound for Sapelo, Ga., 1 sailing vessel was bond for Charleston, S. C., and 1 sailing vessel was bound for Fernandina, Fla. All vessels, save the ones bound for Sapelo, have been remanded here from their ports of destination.

One case of smallpox was found on a vessel remanded from Brunswick, Ga., and 1 case on a vessel remanded from Charleston, S. C. Both cases recovered, and no further cases developed on either vessel.

The British steamship *Dromore* was remanded to this station from Brunswick, Ga., quarantine on account of a case of sickness on board which presented some symptoms of bubonic plague (pneumonic type). Bacteriological investigation proved the case to be broncho pneumonia, and vessel was discharged; sick man was kept in hospital, where he made an uneventful recovery.

The America schooner *John C. Smith*, bound for New York, was remanded to this station from Brunswick, Ga., on account of 5 cases of illness on board which the quarantine officer suspected might be yellow fever. Cases proved to be malarial fever, however, and vessel was discharged.

The general health of the officers and attendants has, with two exceptions, been good. P. A. Surg. H. S. Cumming having suffered from a severe attack of appendicitis, went north, where he underwent an operation. One attendant had a slight attack of malarial fever, but no others became ill, probably because the prevailing winds here have a tendency to carry mosquitoes away from the quarters, thus preventing further infection.

In conclusion I have to respectfully report that relations with the local and other health authorities have been, without exception, harmonious.

The medical officer in command has been subjected to considerable annoyance by parties requesting to visit the island, and when for quarantine or other reasons permission could not be granted, has been threatened with political and other influences and bitterly attacked through the local press.

Requests have been received during the past year from more than two hundred people to visit the island.

Respectfully,

G. M. CORPUT,
Assistant Surgeon, Public Health and Marine Hospital Service, in Command.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

BRUNSWICK.

[Brunswick Quarantine, Brunswick, Ga. Sanitary Inspector R. E. L. Burford in charge.]

[Report of the medical officer in temporary command, Asst. Surg. W. C. Hobdy.]

BRUNSWICK QUARANTINE STATION,
Brunswick, Ga., July 3, 1902.

SIR: I have the honor to transmit herewith, in three separate papers as directed, a report of the transactions and a report of the improvements and repairs at this station during the fiscal year ended June 30, 1902, and also a report of improvements and repairs necessary to be done during the fiscal year ending June 30, 1903.

I would respectfully state that my connection with this station has been brief, in temporary charge, and when the letter directing this report to be made was received I referred it to Doctor Burford, who informed me that he would attend to the matter, and I gave it no further thought till informed of his resigning. For these reasons I am not thoroughly conversant with the affairs and needs of the station and know of no improvements that would call for special appropriation.

Respectfully,

W. C. HOBDY,
Assistant Surgeon, Public Health and Marine-Hospital Service.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

Transactions at Brunswick National Quarantine Station for the year ending June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	0	0	0	0	0	0	0	0	0	0	0	0	0
Steamers inspected and passed	3	1	5	3	5	4	4	2	3	3	1	1	35
Steamers disinfected	0	0	0	0	0	0	0	0	0	0	0	0	0
Sailing vessels inspected and passed	4	8	4	10	5	18	13	9	11	8	5	7	102
Sailing vessels disinfected	6	3	2	1	2	0	0	2	0	2	2	5	25
Crew on steamers	71	22	130	79	125	100	91	43	65	68	19	24	837
Crew on sailing vessels	111	139	67	143	79	208	130	110	106	129	73	154	1,449
Passengers on steamers	1	0	4	0	0	0	0	1	0	0	0	0	6
Passengers on sailing vessels	1	0	0	1	4	1	2	3	1	1	0	0	14

FERNANDINA.

[Cumberland Sound quarantine, Fernandina, Fla.]

[Report of the medical officer in charge, Acting Asst. Surg. J. Louis Horsey.]

CUMBERLAND SOUND QUARANTINE STATION,
Fernandina, Fla., October 10, 1902.

SIR: I have the honor to inclose herewith "tabulated report" of transactions at this station for the year ending June 30, 1902.

Respectfully,

J. LOUIS HORSEY,
Acting Assistant Surgeon, Public Health and Marine-Hospital Service.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

Transactions at Cumberland Sound National Quarantine Station, Fernandina, Fla., for the year ending June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	0	0	0	0	0	0	0	0	0	0	0	......	......
Steamers inspected and passed	4	5	9	6	1	3	7	2	6	9	11	9	72
Steamers disinfected	0	0	2	1	1	0	0	0	0	0	0	0	4
Sailing vessels inspected and passed	13	9	11	28	1	10	3	3	9	8	28	2	135
Sailing vessels disinfected	1	0	2	2	4	0	0	0	0	0	0	0	9
Crew on steamers	111	145	273	214	51	74	167	202	155	215	274	123	2,004
Crew on sailing vessels	111	74	107	241	54	89	26	108	84	84	241	203	1,422
Passengers on steamers	0	0	0	0	0	0	0	0	0	0	0	0	0
Passengers on sailing vessels	0	0	0	0	0	0	0	0	0	0	0	0	0

MAYPORT, FLA.

[St. Johns River inspection station, Mayport, Fla.]

[Report of the medical officer in charge, Acting Asst. Surg. George Macaulay.]

ST. JOHNS RIVER INSPECTION STATION,
Mayport, Fla., September 6, 1902.

SIR: I have the honor to herewith inclose my annual report of the transactions at St. Johns River inspection station, Mayport, Fla., for the fiscal year ending June 30, 1902.

Respectfully,

GEORGE MACAULAY,
Acting Assistant Surgeon, Public Health and Marine-Hospital Service.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

Transactions at St. Johns River (Fla.) National Quarantine Station for the year ending June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	......	0	0	0	0	0	0	0	0	0	5	24	[illegible]
Steamers inspected and passed	......	3	4	0	0	0	0	2	0	0	3	0	12
Steamers disinfected	......	0	0	0	0	0	0	0	0	0	0	0	0
Sailing vessels inspected and passed	......	15	19	24	7	7	6	12	12	7	32	2	[illegible]
Sailing vessels disinfected	......	0	0	0	0	0	0	0	1	0	0	1	[illegible]
Crew on steamers	......	27	68	0	0	0	0	36	0	0	43	61	[illegible]
Crew on sailing vessels	......	112	141	178	58	54	36	83	100	53	280	147	[illegible]
Passengers on steamers	......	0	0	0	0	0	0	0	0	0	0	0	0
Passengers on sailing vessels	......	0	0	0	17	6	3	14	4	14	8	1	67

MIAMI.

[Biscayne Bay quarantine, Miami, Fla.]

[Report of medical officer in charge, Acting Asst. Surg. James M. Jackson, jr.]

Biscayne Bay Quarantine Station,
Mirmi, Fla., October 23, 1902.

Sir: I have the honor to herewith hand you the annual report of transactions for Biscayne Bay Quarantine Station for year ending June 30, 1902. Not knowing these reports were required I never made this till requested by Department.

Very respectfully,

James M. Jackson, Jr.,
Acting Assistant Surgeon, Public Health and Marine-Hospital Service.

The Surgeon-General Public Health and Marine-Hospital Service.

Transactions at Biscayne Quarantine Station, Miami, Fla., for the year ending June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	......	......	......	1	8	9	13	12	12	12	9	8	84
Steamers inspected and passed	11	10	9	9	0	2	15	20	24	12	1	0	113
Steamers disinfected	2	1	0	1	0	0	0	0	0	0	0	0	4
Sailing vessels inspected and passed	6	6	1	1	0	0	1	0	1	0	0	0	16
Sailing vessels disinfected	0	0	0	2	0	0	0	0	0	0	0	0	2
Number of crew on steamers	355	324	264	306	0	84	807	1,211	1,350	505	18	0	5,224
Number of crew on sailing vessels	35	39	4	19	0	0	5	0	3	0	0	0	105
Number of passengers on steamers	47	52	92	115	0	18	294	1,268	1,853	321	0	0	4,064
Number of passengers on sailing vessels	32	41	3	8	0	0	0	0	5	0	0	0	89
Number of cattlemen on steamers	1	0	0	1	0	0	0	0	0	0	0	0	2
Number of stowaways on steamers	0	0	0	0	0	0	0	2	1	0	0	0	3

KEY WEST.

[Key West Quarantine, Key West, Fla.]

[Report of medical officer in charge, Acting Asst. Surg. C. B. Sweeting.]

Key West, Fla. (Quarantine), *August 8, 1902.*

Sir: I have the honor to submit the report of the operations at this station for the fiscal year ending June 30, 1902.

On the 1st day of August, 1901, on the official transfer of the Florida maritime quarantine to the Marine-Hospital Service of the United States, this station commenced its official work as a quarantine station of the Marine-Hospital Service. The official name of the station "Key West Quarantine," located at the port of Key West, Fla. The personnel of the staff consists of Acting Asst. Surg. C. B. Sweeting, officer in command; James W. Haskins, engineer of the naphtha launch *Annie*, and Jerry Buckley, engineer of the Kinyoun-Francis disinfecting plant. This disinfecting plant is now located in the rear of the dockyard of the P. and O. Steamship Company. It consists of a wooden-frame, one-story building, roof covered with tin shingles, and the sides with corrugated iron. This structure is divided into three rooms or compartments, one 30 feet long by 20 feet wide. This room contains the Kinyoun-Francis steam disinfecting plant, with steam boiler, etc. Second room is

42 feet long by 10 feet wide. This was specially constructed as a disinfecting chamber, the roof, sides, and floor of the building being made up of four thicknesses of lumber, the inner two being tongued and grooved, between which is a layer of felt paper; the seams of the inside of the ceiling are white leaded. The inner sides of this chamber are fitted up with woven-wire racks for the spreading out and the thorough distribution of the clothes during the process of disinfection. This chamber was kept in pretty active operation before the introduction of the Kinyoun-Francis disinfecting plant at this station. Third chamber runs between the other two, and is 42 feet long by 8 feet wide. It is a long narrow room used as a baggage room before disinfection.

Boathouse shed, situated at the foot of Caroline street, attached and built from the bathhouse of St. Clair Crain, for the privileges and use of which a rent of $2 per month is paid. This shed protects the launch from the weather and the terrible tropical heat.

The inclosed tabulated form will show the amount of work relative to the boarding, inspection, and disinfection of all classes of vessels from foreign ports.

Under instructions from the Bureau of August 16, 1901, I have been boarding the steamers of the Plant and Peninsula and Occidental lines from Tampa and Miami, Fla., to inspect for smallpox and to vaccinate all those that did not show a good scar. In my inspections I have found no case of smallpox, but found many that needed vaccination. I boarded and inspected 260 of these steamers at all times of the night, which made it very trying to my health. During this time I vaccinated 296 persons.

I am pleased to state that in my inspection of vessels from foreign and infected ports I found no disease of an infectious nature.

This station is supplied with a naphtha launch 25 feet long; a good, staunch little boat, well adapted for the work she is engaged in—that is, the boarding of all vessels. She is of 4 horsepower, capable of steaming 4 miles an hour.

Very respectfully,

C. B. Sweeting,

Acting Assistant Surgeon, Public Health and Marine-Hospital Service.

The Surgeon-General Public Health and Marine-Hospital Service.

Transactions at Key West (Fla.), National Quarantine Station for the year ending June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	......	......	......	......	......	......	......	......	......	......	......	......	......
Steamers inspected and passed	43	29	26	28	27	24	15	17	17	23	32	28	309
Steamers disinfected	......	a 1	......	a 1	......	......	......	......	......	......	......	......	2
Sailing vessels inspected and passed	26	7	6	4	12	10	6	11	10	17	22	17	148
Sailing vessels disinfected	a 1	13	12	8	......	......	......	......	......	......	......	1	35
Crew on steamers	1,628	1,075	973	1,111	1,196	1,099	721	1,169	763	1,757	1,224	1,121	13,837
Crew on sailing vessels	96	149	135	90	88	76	46	80	81	129	149	122	1,241
Passengers on steamers	495	99	135	126	814	1,227	945	980	1,434	837	1,428	160	8,680
Passengers on sailing vessels	79	......	43	56	83	95	56	62	100	90	67	77	808

a Held in quarantine.

BOCA GRANDE.

[Boca Grande Quarantine, Punta Gorda, Fla.]

[Report of the medical officer in charge, Acting Asst. Surg. B. B. Blount.]

Boca Grande Quarantine,
Punta Gorda, Fla., July 1, 1902.

Sir: I have the honor to inclose annual report of transactions at Boca Grande quarantine station for the year ending June 30, 1902.

I will state that there is nothing shipped from this port by water except cattle and phosphate; and as the phosphate works were destroyed by fire last fall, there has been no shipping done from here since that time except cattle shipping. However, the phosphate company hopes to have its plant rebuilt and fully equipped in about a month or six weeks, when phosphate shipping will again commence.

Very respectfully,

B. B. Blount,

Acting Assistant Surgeon, Public Health and Marine-Hospital Service.

The Surgeon-General Public Health and Marine-Hospital Service.

Transactions at Boca Grande National Quarantine Station for the year ending June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	0	7	4	1	2	1	0	0	0	0	2	7	24
Steamers inspected and passed	6	4	1	5	0	1	0	1	0	0	0	0	18
Steamers disinfected	0	0	0	0	0	0	0	0	0	0	0	0	0
Sailing vessels inspected and passed	5	1	2	3	0	3	2	0	3	0	2	0	21
Sailing vessels disinfected	0	0	0	0	0	0	0	0	0	0	0	0	0
Crew on steamers	91	68	11	96	0	16	0	30	0	0	0	0	312
Crew on sailing vessels	53	8	16	23	0	38	18	0	19	0	14	0	189
Passengers on steamers	0	0	0	0	0	0	0	0	0	0	0	0	0
Passengers on sailing vessels	0	0	0	0	0	0	0	0	0	0	0	0	0

TAMPA BAY.

[Tampa Bay Quarantine (on Mullet Key); post-office address, Tampa, Fla.]

[Report of the medical officer in command, Asst. Surg. Claude C. Pierce. Assumed command under official orders of November 7, 1901.]

Tampa Bay Quarantine,
Mullet Key, Fla., July 1, 1902.

Sir: In compliance with Bureau letter of May 29, 1902, I have the honor to submit the following report of transactions of the Service at Tampa Bay Quarantine during the fiscal year ending June 30, 1902:

The station had been operated by the Florida State board of health until August 1, 1901, when its purchase was effected by the United States Treasury Department. Asst. Surg. John McMullen assumed charge on that date, relieving Dr. L. S. Smith, the State quarantine officer.

The property acquired by the purchase was a disinfecting wharf 206 feet front, having in its superstructure quarters for attendants and disinfecting machinery as follows: A sulphur furnace and steam chest (both Charleston pattern), bichloride pump and tank, and boiler and engine for sulphur fan. The other property was a five-room cottage used as a hospital for isolation of cases and a 6-horsepower naphtha launch.

The buildings, four in number, which were moved from the Egmont Key detention camp in 1900, and rebuilt on Mullet Key, complete the equipment of the station. As one month had passed before the Service assumed charge, authority was given to purchase subsistence in the open market, an arrangement that has been found to the interest of the Service until the present time.

All the property of the Tortugas quarantine and detention camp, the Boca Chica detention camp, the Egmont camp, and that purchased from the State of Florida has been concentrated here, checked up, and combined on one return.

During the eleven months of this fiscal year that the Service has conducted this station the following inspection and disinfection of vessels has been done:

Steamers inspected and passed	108
Sailing vessels inspected and passed	142
Total number of vessels passed	250
Steamers disinfected	5
Sailing vessels disinfected	11
Total number of vessels disinfected	16
Crew on sailing vessels	1,367
Crew on steamers	2,375
Passengers on steamers	148
Passengers on sailing vessels	50
Total number of passengers and crew examined	3,940

Respectfully,

Claude C. Pierce,
Assistant Surgeon, Public Health and Marine-Hospital Service.

The Surgeon-General Public Health and Marine-Hospital Service.

Transactions at Tampa Bay National Quarantine Station for the year ending June 30, 1902.

	July.[a]	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	......	0	0	0	0	0	0	0	0	0	0	0	([b])
Steamers inspected and passed	......	27	19	12	5	0	3	4	8	10	10	10	108
Steamers disinfected	......	4	0	0	0	0	0	0	0	0	0	1	5
Sailing vessels inspected and passed	......	23	13	13	4	16	10	9	10	13	16	15	142
Sailing vessels disinfected	......	6	0	0	1	0	0	0	0	0	1	3	11
Crew on steamers	......	520	355	236	136	0	74	104	212	276	201	261	2,375
Crew on sailing vessels	......	265	111	111	46	150	111	77	88	109	148	151	1,367
Passengers on steamers	......	8	9	3	106	0	0	1	11	3	1	6	148
Passengers on sailing vessels	......	10	0	0	2	10	4	5	4	3	7	5	50

[a] No records for July, when State of Florida had charge.

[b] No record kept.

CEDAR KEYS, FLA.

[Cedar Keys Quarantine, Cedar Keys, Fla.]

[Report of the medical officer in charge, Acting Asst. Surg. R. T. Walker.]

Cedar Keys, Fla., *July 8, 1902.*

Sir: I inclose my annual report for the year ending June 30, 1902.

I begin the report with August 1, 1901, the time this station was made a Government station. As the condition of things has so much improved in Cuba, Dr. Porter decided it was not necessary to board the sponge boats after June 1.

Respectfully, yours,

R. T. Walker,
Acting Assistant Surgeon, Public Health and Marine-Hospital Service.

The Surgeon-General Public Health and Marine-Hospital Service.

Transactions at Cedar Keys National Quarantine Station for the year ending June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	......	......	......	......	......	......	......	......	......	......	......	......	......
Steamers inspected and passed	......	......	......	2	......	......	......	......	......	......	......	......	2
Steamers disinfected	......	......	......	......	......	......	......	......	......	......	......	......	......
Sailing vessels inspected and passed	......	61	38	44	......	......	......	......	......	......	50	......	193
Sailing vessels disinfected	......	......	......	......	......	......	......	......	......	......	......	......	......
Crew on steamers	......	......	......	51	......	......	......	......	......	......	......	......	51
Crew on sailing vessels	......	508	321	449	......	......	......	......	......	......	327	......	1,605
Passengers on steamers	......	......	......	......	......	......	......	......	......	......	......	......	......
Passengers on sailing vessels	......	......	......	......	......	......	......	......	......	......	......	......	......

ST. GEORGE SOUND.

[St. George Sound Quarantine, East and West Pass, Carrabelle, Fla.]

[Report of the medical officer in charge, Acting Asst. Surg. E. L. Stewart.]

ST. GEORGE SOUND QUARANTINE, EAST PASS,
Carrabelle, Fla., October 10, 1902.

SIR: I have the honor to submit annual report of vessels at this port (Apalachicola included):

	Inspected.	Fumigated.
East Pass	66	1
West Pass	4	0

As I have no blank for this report I am using the above improvised form.

Respectfully,

E. L. STEWART,
Acting Assistant Surgeon, Public Health and Marine-Hospital Service.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

PENSACOLA.

[Santa Rosa Quarantine, Pensacola, Fla.]

[Report of the medical officer in charge, Acting Asst. Surg. R. C. White.]

SANTA ROSA QUARANTINE, *July 25, 1902.*

SIR: I have the honor to transmit report of transactions at this station for the year ending June 30, 1902.

I respectfully state no repairs or improvements done at the station during the past year, save the putting new tubes in disinfecting boiler.

Respectfully,

R. C. WHITE,
Acting Assistant Surgeon, Public Health and Marine-Hospital Service.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

Transactions at Santa Rosa National Quarantine Station for the year ending June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	1	......	......	......	......	......	......	......	......	......	4	6	11
Steamers inspected and passed	15	16	10	21	20	15	17	19	18	17	14	10	192
Steamers disinfected	4	5	4	14	3	4	3	......	1	1	3	7	36
Sailing vessels inspected and passed	9	11	3	21	14	18	18	7	17	15	7	6	[illegible]
Sailing vessels disinfected	6	2	3	2	2	......	6	......	4	6	5	8	44
Crew on steamers	476	608	380	648	570	518	617	492	496	496	530	564	2,086
Crew on sailing vessels	150	55	134	145	312	348	304	87	385	296	155	225	2,536
Passengers on steamers	10	3	9	3	3	......	1	......	6	6	8	4	43
Passengers on sailing vessels	3	......	3	1	7	3	3	2	1	1	9	3	36
Sailing vessels passed after discharging ballast	3	1	4	6	11	11	3	2	4	4	2	4	57
Steamers passed after completion of 5 days	......	1	2	......	......	......	......	......	......	......	3	5	11

PASCAGOULA.

[Report of Acting Assistant Surgeon B. F. Duke, in charge.]

Transactions at Pascagoula (Miss.), National Quarantine Station for the year ending June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	1	......	1	......	1	......	......	......	......	......	......	......	3
Steamers inspected and passed	3	2	......	......	......	......	1	......	1	3	......	......	10
Steamers disinfected	......	......	......	......	......	......	......	......	......	......	......	......	......
Sailing vessels inspected and passed	5	6	3	8	10	20	21	12	29	13	16	2	145
Sailing vessels disinfected	......	......	......	......	......	......	......	......	......	......	......	......	......
Crew on steamers	77	50	......	......	......	......	28	......	23	69	......	......	247
Crew on sailing vessels	40	42	27	60	74	140	168	85	203	104	108	15	1,065
Passengers on steamers	......	......	......	......	......	......	......	......	......	......	......	......	......
Passengers on sailing vessels	......	......	......	......	......	......	......	......	......	......	......	......	......

GULF.

[Gulf Quarantine; location, Ship Island, Mississippi; post-office address, Biloxi, Miss.]

[Report of the medical officer in command, P. A. Surg. S. B. Grubbs. Assumed command under official orders of April 18, 1902.]

Gulf Quarantine Station, *July 10, 1902.*

Sir: I have the honor to make the following report of transactions at this station for the year ending June 30, 1902, as per table attached.

One hundred and seventeen vessels were inspected and passed, while 103 were disinfected.

Seven severe cases of beriberi were treated in the hospital, but no cases of yellow fever were received.

Respectfully,

S. B. Grubbs,
Passed Assistant Surgeon,
Public Health and Marine-Hospital Service.

The Surgeon-General Public Health and Marine-Hospital Service.

Transactions at Gulf National Quarantine Station for the year ending June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	0	0	0	0	0	0	0	0	0	0	0	0	0
Steamers inspected and passed	8	6	2	2	1	0	0	0	1	3	2	3	28
Steamers disinfected	0	0	0	0	1	0	0	0	0	1	1	2	5
Sailing vessels inspected and passed	5	4	10	4	13	6	11	5	14	10	4	3	89
Sailing vessels disinfected	12	12	14	11	1	3	4	1	4	4	10	22	98
Crew on steamers	301	182	63	70	48	0	0	0	24	101	81	125	995
Crew on sailing vessels	80	111	285	146	167	85	211	57	227	157	135	227	1,888
Passengers on steamers	16	0	0	0	0	0	0	0	0	0	0	0	16
Passengers on sailing vessels	5	2	1	4	1	1	2	1	4	5	1	3	30

SAN DIEGO.

[San Diego Quarantine, San Diego, Cal.]

[Report of the medical officer in charge, A. A. Surg. W. W. McKay.]

San Diego Quarantine Station,
San Diego, Cal., July 1, 1902.

Sir: I have the honor to forward herewith the transactions of this station for the fiscal year ending June 30, 1902.

During that period, as will be noted on the report, 156 vessels arrived at quarantine, were boarded, inspected, and passed, or passed on certificate of their medical officers as naval vessels. Two large steamers were disinfected, making the total number of vessels arriving and departing from the station during the year 158. The steamer disinfected in July was on account of her having had deaths aboard from bubonic plague while en route from the Orient. The steamer disinfected in March was on account of having had smallpox aboard in the person of one of her cabin passengers. This latter vessel came under the jurisdiction of the State and municipal health authorities, as she was a large passenger steamer plying only between California ports. The United States quarantine officer, however, took charge of the vessel and crew by request of the municipal health authorities and the mayor, they having passed a resolution making such request. The Fifty-sixth Congress, by act of June 6, 1900, made appropriation of $23,750 for wharf extension, buildings, crematory, and addition to the water supply. A contract was let and approved April 5, 1902, to William H. Healy, of San Francisco, and the work is now under way for the wharf extension, bath houses, and barracks for steerage passengers. Upon the completion of this contract there will still remain a small balance in the construction fund, but not sufficient for the construction of the barracks for officers and cabin passengers of infected vessels and for a crematory.

The station would be seriously handicapped in case of a death from infectious disease for lack of a crematory. There is absolutely now no place on land where burial would be allowed. The only apparent recourse would be burial at sea, which is not desirable and most of the time impracticable by means of small craft. The reason for the construction fund not being sufficient is raise in the price of all building material and labor since the estimates were made three or four years since. Another serious handicap of the station is lack of sufficient grounds. The entire space occupied by the station is only about 400 feet square. Within this space are crowded the station buildings, leaving absolutely no place suitable for isolating infectious cases. Additional land will have to be procured or a suitable detention vessel for infectious cases provided and anchored at some safe point in the bay.

Respectfully,

W. W. McKay,
Acting Assistant Surgeon, Public Health and Marine-Hospital Service.

The Surgeon-General Public Health and Marine-Hospital Service.

Transactions at San Diego National Quarantine Station, San Diego, Cal., for the fiscal year ended June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	0	0	0	0	0	0	0	0	0	0	0	0	0
Steamers inspected and passed	10	6	7	11	7	9	7	6	7	6	7	6	89
Steamers disinfected	1	0	0	0	0	0	0	0	1	0	0	0	[a]2
Sailing vessels inspected and passed	6	6	6	9	3	5	5	3	5	2	2	4	56
Sailing vessels disinfected	0	0	0	0	0	0	0	0	0	0	0	0	0
Crew on steamers	263	102	147	295	126	324	127	122	191	102	145	102	2,046
Crew on sailing vessels	17	35	47	65	54	36	13	10	14	8	15	11	325
Passengers on steamers	172	144	137	169	129	134	106	104	150	129	118	135	1,627
Passengers on sailing vessels	0	1	4	5	3	2	0	0	0	0	0	2	17
Naval vessels passed on certificate of medical officers	0	2	1	0	1	1	0	0	1	5	0	0	11
Crew on naval vessels	0	446	140	0	401	140	0	0	590	910	0	0	2,627

[a] One disinfected in July for plague, 1 in March for smallpox.

LOS ANGELES (AND SUBPORT).

[Report of P. A. Surg. Hill Hastings, medical officer in command.]

LOS ANGELES, CAL., *July 8, 1902.*

SIR: I have the honor to transmit herewith report of transactions at this station during the fiscal year ended June 30, 1902, including marine-hospital treatment of sick and injured seamen and quarantine work at the subports of San Pedro and Port Los Angeles, Cal.

Respectfully,

HILL HASTINGS,
Passed Assistant Surgeon, Public Health and Marine-Hospital Service.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

Transactions at Port Los Angeles National Quarantine Station for the year ended June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	......	......	......	......	......	......	......	......	......	......	......	......	......
Steamers inspected and passed	5	2	4	2	4	4	3	4	1	......	1	......	30
Steamers disinfected	......	......	......	......	......	......	......	......	......	......	......	......	......
Sailing vessels inspected and passed	......	......	......	......	......	2	1	1	......	......	......	1	5
Sailing vessels disinfected	......	......	......	......	......	......	......	......	......	......	......	......	......
Crew on steamers	163	64	178	117	128	122	99	141	40	......	39	......	1,091
Crew on sailing vessels	......	......	......	......	......	50	21	24	......	......	......	27	122
Passengers on steamers	......	......	4	9	......	......	......	3	2	......	......	......	18
Passengers on sailing vessels	......	......	......	......	......	......	......	......	......	......	......	......	......

SAN FRANCISCO.

[San Francisco Quarantine, post-office address, Angel Island, Cal.]

[Report of the medical officer in command, P. A. Surg. H. S. Cumming. Assumed command under official orders of December 28, 1901.]

San Francisco Quarantine Station,
Angel Island, Cal., July 16, 1902.

Sir: I have the honor to submit the following report of sanitary transactions at this station during the fiscal year ending June 30, 1902.

Transactions at San Francisco National Quarantine Station for year ended June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	0	4	1	2	1	1	3	10	6	6	4	7	45
Steamers inspected and passed	35	45	43	42	33	37	22	28	33	31	31	35	415
Steamers disinfected	1	0	0	0	0	0	1	1	4	2	1	0	10
Sailing vessels inspected and passed	46	59	77	53	24	45	39	49	29	46	11	34	512
Sailing vessels disinfected	0	0	0	0	0	0	0	2	2	1	0	0	5
Crew on steamers	2,612	4,542	3,369	3,601	2,341	3,187	2,503	3,576	3,149	2,921	2,619	3,706	38,126
Crew on sailing vessels	791	1,157	2,748	1,296	501	926	769	1,144	696	4,988	5,029	606	20,651
Passengers on steamers	3,810	5,460	4,027	5,476	2,484	3,238	4,025	4,318	5,627	4,988	5,029	8,854	60,336
Passengers on sailing vessels	91	86	2,617	530	28	39	16	23	21	81	41	61	3,634
Vessels held for diagnosis	0	0	0	0	0	0	0	1	0	1	0	0	2
Persons held in quarantine and disinfected	47	0	0	0	0	0	234	271	1,812	444	114	16	2,938
Glandular examinations of crew	278	695	623	547	569	618	579	440	550	701	433	445	6,473
Glandular examinations of passengers	466	675	794	651	484	371	303	209	241	462	433	520	5,609
Cases of quarantinable diseases treated	0	0	0	0	0	0	1	0	1	0	1	0	3

The equipment of the station is, with the exceptions noted in the annual letters containing estimates, in an efficient condition. As an illustration of its capacity, I may state that in one instance 800 undisciplined recruits with officers, about 40 cabin passengers, and part of the crew—in all about 1,000 persons with their effects—were handled, bathed, and disinfected in less than eighteen hours, together with 900 sacks of mail. With the present car system put in by the station force it is believed that 2,000 persons can be handled in one day. Since the installation of this system 40,000 hides have been unbaled, disinfected, and rebaled in three days.

Perhaps nothing proves the wisdom of the Service in placing medical officers at foreign ports more than the history of this station since that action was taken. Vessels have been arriving from foreign ports with their cargo, personnel, food, and water supply certified to by these officers, and have been given pratique when otherwise they would have been detained. It is estimated that not less than $2,000,000 have been saved shipowners by this step.

The relations of the station with shipowners and commercial bodies, as well as with the local health authorities and coordinate branches of the Government Service, have been cordial and pleasant, and every endeavor has been make to convince the public that the sole aim of the Service is to prevent the introduction of disease with as little hardship to commercial interests as is possible with sanitary safety.

Placing guards upon vessels arriving at night has not only prevented communication with vessels in quarantine but also increases the respect of the shipping interest for the Service.

In addition to the quarantine work proper 7,760 immigrants have been examined at this station.

Respectfully, yours,

HUGH S. CUMMING,
P. A. Surg., Public Health and Marine-Hospital Service, Quarantine Officer.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

EUREKA.

[Report of Actg. Asst. Surg. B. Y. Harris, in charge.]

EUREKA, CAL., *July 12, 1902.*

SIR: I have the honor to transmit report of transactions at this station for the fiscal year.

I suggest that should a sulphur furnace be supplied this station much time as well as sulphur could be saved during the process of fumigation of vessels, with more satisfactory results to all concerned.

Respectfully, yours,

B. Y. HARRIS,
Acting Assistant Surgeon, Public Health and Marine-Hospital Service.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

Transactions at Eureka (Cal.), National Quarantine Station for the year ending June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	0	0	0	0	0	0	0	0	0	0	0	0	0
Steamers inspected and passed	0	0	0	0	0	0	0	0	0	0	0	0	0
Steamers disinfected	0	0	0	0	0	0	0	0	0	0	0	0	0
Sailing vessels inspected and passed	0	3	2	1	3	2	0	2	3	3	3	3	25
Sailing vessels disinfected	0	0	0	0	0	0	0	0	0	1	1	0	2
Crew on steamers	0	0	0	0	0	0	0	0	0	0	0	0	0
Crew on sailing vessels	0	29	19	12	44	37	0	23	28	38	39	33	302
Passengers on steamers	0	0	0	0	0	0	0	0	0	0	0	0	0
Passengers on sailing vessels	0	3	0	0	5	0	0	0	2	2	5	1	18

COLUMBIA RIVER.

[Columbia River Quarantine; post-office address, Astoria, Oreg.]

[Report of the medical officer in command, Asst. Surg. Baylis H. Earle. Assumed command under official orders of November 28, 1900.]

COLUMBIA RIVER QUARANTINE STATION,
Astoria, Oreg., July 8, 1902.

Transactions at the Columbia River National Quarantine Station for the year ending June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	7	6	23	22	20	28	21	12	11	0	8	8	161
Steamers inspected and passed	2	2	7	4	5	4	2	1	3	1	0	3	34
Steamers disinfected	0	0	1	0	0	0	0	0	0	0	0	0	1
Sailing vessels inspected and passed	5	4	15	18	15	24	19	11	8	2	0	5	126
Sailing vessels disinfected	0	0	0	0	0	0	0	0	0	0	0	0	0
Crew on steamers	105	100	383	159	229	189	104	28	150	50	0	192	1,689
Crew on sailing vessels	137	81	350	436	341	484	449	265	195	54	0	68	2,860
Passengers on steamers	4	2	513	13	19	10	0	0	7	0	0	39	607
Passengers on sailing vessels	1	1	2	6	6	8	10	5	0	2	0	1	42

Respectfully,

BAYLIS H. EARLE,
Assistant Surgeon, Public Health and Marine-Hospital Service.

HOQUIAM, WASH.

[Report of Actg. Asst. Surg. T. C. Frary, in charge.]

PORT OF HOQUIAM, WASH., *July 1, 1902.*

SIR: I have the honor of transmitting a summary report of the total number of vessels arriving from foreign ports and subjected to inspection at port of Hoquiam, Wash., during the fiscal year ending June 30, 1902:

Total number of foreign vessels inspected	37
Number disinfected	0

Respectfully,

T. C. FRARY,
Acting Assistant Surgeon, Public Health and Marine-Hospital Service.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

PORT TOWNSEND.

[Port Townsend Quarantine; Port Townsend, Wash.; boarding station, Port Townsend; disinfecting station, Diamond Point.]

[Report of the medical officer in command, Asst. Surg. M. H. Foster. Assumed command under official orders of July 22, 1899.]

QUARANTINE STATION,
Port Townsend, Wash., July 14, 1902.

SIR: I have the honor to transmit herewith report of vessels inspected and disinfected at this station during the fiscal year ending June 30, 1902. The number of vessels handled at the subports is also included in the annual report of transactions.

The efforts of the station during the past year have chiefly been directed toward the prevention of the entrance of plague from the Orient and smallpox from Alaska. Cases of smallpox were taken off of two vessels and treated in the quarantine hospital.

Respectfully,

M. H. FOSTER,
Assistant Surgeon, Public Health and Marine-Hospital Service.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

Transactions at Port Townsend (Wash.), National Quarantine Station for the year ending June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed	......	......	......	......	......	......	......	......	......	......	......	......	......
Steamers inspected and passed	55	50	46	40	12	15	24	16	16	11	14	21	340
Steamers disinfected	1	1	1	4	2	2	6	6	3	1	1	1	29
Sailing vessels inspected and passed	30	54	39	21	25	21	21	43	22	25	30	19	350
Sailing vessels disinfected	1	......	1	......	1	2	......	1	1	1	......	2	10
Crew on steamers	3,267	2,741	2,686	2,211	653	764	1,519	994	822	881	1,020	1,249	20,796
Crew on sailing vessels	620	687	583	304	404	418	410	726	357	440	467	321	5,727
Passengers on steamers	2,180	3,056	4,683	4,339	223	131	824	642	812	870	1,245	1,559	23,198
Passengers on sailing vessels	24	28	58	16	......	5	1	21	5	10	10	11	189

QUARANTINE STATION,
Port Townsend, Wash., October 15, 1902.

SIR: In reply to Bureau letter of the 7th instant, relative to the annual report from this station for the year ended June 30, 1902, I have the honor to state that the figures given in my report included the inspections made at Seattle and Port Angeles, as directed by Bureau memorandum. A separate report from Seattle was forwarded on October 7. The report from Tacoma is herewith transmitted, and also the report from Port Angeles, which we have made out ourselves on the form prescribed by the Bureau.

Respectfully,

M. H. FOSTER,
Assistant Surgeon, Public Health and Marine-Hospital Service.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

TACOMA.

[Report of Actg. Asst. Surg. F. J. Schug, in charge.]

TACOMA, WASH., *October 8, 1902.*

SIR: I have the honor to report the following transactions at this port during the fiscal year ended June 30, 1902, viz:

July 8. Examined 2 immigrants which arrived on the steamship *Bremar* from Hongkong.

July 9. Fumigated 137 packages Chinese food stuffs and merchandise which arrived on the steamship *Bremar* from Hongkong July 8, 1902.

As commissioner of health of the city of Tacoma, February 10, 1902, I had the small steamer *Sentinel*, of Tacoma, fumigated, and crew and passengers vaccinated on account of a supposed case of smallpox.

August 6, 1902. Fumigated the sound steamer *Typhoon*, of Tacoma, on account of diphtheria.

Respectfully,

F. J. SCHUG,
Acting Assistant Surgeon, Public Health and Marine-Hospital Service.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

PORT ANGELES, WASH.

Transactions at Port Angeles (Wash.) National Quarantine Station for the year ended June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed													
Steamers inspected and passed													
Steamers disinfected													
Sailing vessels inspected and passed	1	4				3	2	12		5			27
Sailing vessels disinfected													
Crew on steamers													
Crew on sailing vessels	16	71				44	46	215		124			516
Passengers on steamers													
Passengers on sailing vessels	3	2					1	8		2			16

M. H. Foster,
Assistant Surgeon, Public Health and Marine-Hospital Service.

SEATTLE.

[Report of Actg. Asst. Surg. Charles B. Ford, in charge.]

Seattle, Wash., *October 3, 1902.*

Sir: Through Asst. Surg. M. H. Foster I have the honor to transmit herewith the annual report showing the number of steamships and sailing vessels inspected at this port, with the number of passengers and crew on each and the totals for the year ended June 30, 1902, in accordance with Bureau circular of September 20, 1902.

Respectfully,

Chas. B. Ford,
Acting Assistant Surgeon.

Transactions at Seattle (Wash.) National Quarantine Station for the year ended June 30, 1902.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Steamships inspected and passed	7	3	5	2		1				2		9	29
Crew on steamships	427	185	358	179		108				100		632	1,989
Passengers on steamships	328	76	66	70		106				184		1,849	2,679

TEXAS-MEXICAN BORDER QUARANTINE.

The system of land quarantine which has been for some years in force on the Texas-Mexican border at El Paso, Eagle Pass, and Laredo has been continued during the past year, it being deemed necessary to keep up these quarantine stations in cooperation with the efforts of the State of Texas to keep out yellow fever, smallpox, and typhus fever, which three diseases have been rather constantly present in the Republic of Mexico. The reports of the officers in each of these stations follow.

LAREDO, TEX.

LAREDO, TEX., *October 20, 1902.*

SIR: I have the honor to submit herewith for annual report the transactions of this station for the fiscal year ended June 30, 1902. During this period the number of passenger trains entering from Mexico inspected were 731. Number of persons passed inspection on passenger trains entering from Mexico were 20,554. There were 464 immigrants vaccinated or revaccinated upon entry. Number of persons refused entry or detained at detention camp on account of being recently from an infected port, 35. Number of trunks and bundles of suspicious baggage disinfected, 40. Number of pieces of Pullman Company linen disinfected, 113,539. Pullman Company blankets disinfected, 76—at expense of Pullman Company.

On October 9, 1901, occupied a five-room house, convenient to inspection station, as an observation camp and also to store tents, etc.; and I have found persons detained are better pleased than when I was obliged to use tents only for that purpose.

Respectfully,

H. J. HAMILTON,
Acting Assistant Surgeon, Public Health and Marine-Hospital Service.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

EAGLE PASS, TEX.

EAGLE PASS, TEX., *July 1, 1902.*

SIR: I have the honor to make the following report of inspection of persons entering the United States via this port during the fiscal year ending June 30, 1902, viz:

Trains inspected	382
Persons inspected on trains	11,561
Persons inspected on Rio Grande	5,223
Pieces of baggage disinfected	74
Persons detained in quarantine	20

No contagious diseases developed at detention camp during the year.

Respectfully,

LEO HUME,
Acting Assistant Surgeon, Public Health and Marine-Hospital Service, in Charge.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

EL PASO, TEX.

EL PASO, TEX., *June 30, 1902.*

SIR: I have the honor to transmit herewith summary of transactions at this station for the year ending June 30, 1902:

Inspection Mexican Central passengers		9,129
Special inspection on account of typhus fever in the City of Mexico		412
Inspection Rio Grande and Pacific Railway		1,060
Inspection excursionists at different dates		566
Inspection Mexican immigrants		6,708
Inspection certificates of death of corpses transported into the United States		11
Inspection immigrants from different other countries		57
Disinfection soiled linen for laundry work	pieces	15,927
Disinfection baggage, clothing, blankets, etc., of immigrants	do	1,847
Disinfection of cattle hides in carload		12
Disinfection of cattle hides loose in wagon		4,388
Detention of passengers from three to five days from Tampico and Vera Cruz		8
Vaccination of immigrants, children, and other destitutes		236

Detention and disinfection of one private Pullman car, one of the passengers having had malignant diphtheria.

I have the satisfaction to state, though smallpox has been prevalent almost throughout the United States, El Paso, Tex., and Juarez, Mexico, have almost escaped this terrible disease, which is no doubt due to the fact that 98 per cent of the population is thoroughly vaccinated.

Both El Paso, Tex., and Juarez, Mexico, have decidedly improved in health during the past year. The reason is that both are giving more attention to systematic sanitary measures.

Respectfully,

E. ALEXANDER,
Acting Assistant Surgeon, Public Health and Marine-Hospital Service.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

DISCRIMINATIONS IN QUARANTINE RESTRICTIONS.

(Circular letter.)

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL MARINE-HOSPITAL SERVICE,
Washington, October 22, 1901.

To Commissioned Medical Officers and Acting Assistant Surgeons of the Marine-Hospital Service:

You are hereby advised when it becomes necessary to institute any special quarantine restrictions against persons arriving at ports of the United States or at ports in the possessions or dependencies thereof from regions infected with any of the quarantinable diseases, such special restrictions should be applied to all persons arriving from such regions and should not discriminate for or against any particular race or people; in other words, it should be a geographical discrimination and not racial. It should be borne in mind that the treaties entered into between the United States and foreign nations permit, under the favored-nation clause, travel on the part of the residents of such foreign nations within the domains of the United States. It is therefore necessary that extreme care be exercised in all quarantine examinations to avoid any act which may give offense to treaty nations.

WALTER WYMAN,
Surgeon-General M. H. S.

AMENDMENTS TO THE QUARANTINE REGULATIONS OF THE UNITED STATES.

During the year the following circulars amending the quarantine regulations of November 12, 1899, have been promulgated:

[Department Circular No. 34, 1902.]

AMENDMENT TO DEPARTMENT CIRCULAR NO. 134, DATED AUGUST 31, 1900, RELATING TO FRUIT VESSELS PLYING BETWEEN INFECTED OR SUSPECTED FRUIT PORTS AND PORTS OF THE UNITED STATES.

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL MARINE-HOSPITAL SERVICE,
Washington, D. C., April 1, 1902.

To United States consular officers, masters and owners of vessels, collectors of customs, national, state, and local quarantine officers, and others:

In view of the fact that five days' detention is considered sufficient in the case of passengers on fruit vessels leaving uninfected fruit ports of Central and South America for ports of the United States, paragraph 7 of Department Circular No. 134, dated August 31, 1900, entitled "Special Regulations for the Government of Vessels Plying between Infected or Suspected Fruit Ports and Ports of the United States," is hereby amended by substituting the word "five" for the word "ten" wherever the latter occurs in said paragraph.

WALTER WYMAN,
Surgeon-General Marine-Hospital Service.

Approved:
L. M. SHAW,
Secretary of the Treasury.

[Department Circular No. 43, 1902. Marine-Hospital Service.]

AMENDING UNITED STATES TREASURY QUARANTINE REGULATIONS—CUBA.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., April 26, 1902.

Collectors of customs, quarantine officers of the United States, and others concerned:

In view of the improved conditions in the ports of Cuba, and the fact that there has been no yellow fever reported in that island in 1902, to the present date, the season of close quarantine for yellow fever (i. e., the season during which detention of personnel and disinfection of vessels from infected ports is demanded) against the island of Cuba is hereby postponed to June 1, 1902, provided that the Surgeon-General of the Marine-Hospital Service is authorized to put in effect the close quarantine immediately should changed conditions require it. This postponement does not obviate the necessity of inspection, and applies only to the island of Cuba.

O. L. SPAULDING,
Acting Secretary.

QUARANTINE LEGISLATION.

Although the following legislation was enacted during the fiscal year 1901, mention of it was omitted in the annual report for that year, and it is inserted here in order that the record of all quarantine legislation, published in the annual reports of the Service, may be made complete.

On April 20, 1900, a bill (S. 4171) was introduced in the Senate by Mr. Vest, and an identical bill (H. R. 11139) was introduced by Mr. Hepburn in the House of Representatives on the same date. This bill amended section 6 of the act of Congress approved February 15, 1893, and added to that act three sections—10, 11, and 12.

On May 11, 1900, hearings were granted by the Senate Committee on Public Health and National Quarantine both upon this bill (S. 4171), which was the bill favored by the Department, and on bill (S. 1440) introduced into the Senate by Mr. Spooner December 12, 1899. At this hearing were a number of representatives of State quarantines and State boards of health, who, together with the Surgeon-General, were given full hearing.

The bill (S. 4171) was subsequently amended and reported to the Senate May 18, 1900, by Mr. Vest, chairman of the Committee on Public Health and National Quarantine, and passed the Senate May 26, 1900. On May 28, 1900, it was referred, in the House of Representatives, to the Committee on Interstate and Foreign Commerce. It was favorably reported by that committee on May 29, 1900. (Report No. 1833, H. R., 56th Cong., 1st sess.)

On March 3, 1901, it passed the House and was approved by the President. Following is the act:

ACT MARCH 3, 1901.

AN ACT to amend "An Act granting additional quarantine powers and imposing additional duties upon the Marine-Hospital Service," approved February fifteenth, eighteen hundred and ninety-three.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That an Act granting additional quarantine powers and imposing additional duties upon the Marine-Hospital Service, approved February fifteenth, eighteen hundred and ninety-three, be amended by addition of the following sections:

"SEC. 10. That the Supervising Surgeon-General, with the approval of the Secretary of the Treasury, is authorized to designate and mark the boundaries of the quarantine grounds and quarantine anchorages for vessels which are reserved for use at each United States quarantine station; and any vessel or officer of any vessel or other person, other than State or municipal health or quarantine officers, trespassing or otherwise entering upon such grounds or anchorages in disregard of the quarantine rules and regulations, or without permission of the officer in charge of such station, shall be deemed guilty of a misdemeanor and subject to arrest, and upon conviction thereof be punished by a fine of not more than three hundred dollars or imprisonment for not more than one year, or both, in the discretion of the court. Any master or owner of any vessel, or any person violating any provision of this Act or any rule or regulation made in accordance with this Act, relating to inspection of vessels or relating to the prevention of the introduction of contagious or infectious diseases, or any master, owner, or agent of any vessel making a false statement relative to the sanitary condition of said vessel or its contents or as to the health of any passenger or person thereon, shall be deemed guilty of a misdemeanor and subject to arrest, and upon conviction thereof be punished by a fine of not more than five hundred dollars or imprisonment for not more than one year, or both, in the discretion of the court.

"SEC. 11. That any vessel sailing from any foreign port without the bill of health required by section two of this Act, and arriving within the limits of any collection district of the United States, and not entering or attempting to enter any port of the United States, shall be subject to such quarantine measures as shall be prescribed by regulations of the Secretary of the Treasury, and the cost of such measures shall be a lien on said vessel, to be recovered by proceedings in the proper district court of the United States and in the manner set forth above as regards vessels from foreign ports without bills of health and entering any port of the United States.

"SEC. 12. That the medical officers of the United States, duly clothed with authority to act as quarantine officers at any port or place within the United States, and when performing the said duties, are hereby authorized to take declarations and administer oaths in matters pertaining to the administration of the quarantine laws and regulations of the United States."

DIVISION OF SCIENTIFIC RESEARCH.

REPORT OF THE DIVISION OF SCIENTIFIC RESEARCH.

By H. D. Geddings,
Assistant Surgeon-General, Public Health and Marine-Hospital Service, in Charge.

ORGANIZATION AND DUTIES OF THE DIVISION.

This division of the Bureau was organized in September, 1901, and the officer in charge has been engaged in reviewing the literature of scientific progress, making a card index of the same, and together with the director of the hygienic laboratory reporting upon such matters relating to hygiene and public health as may be referred to the division by the Surgeon-General. The affairs of the hygienic laboratory (which is conducted as a station of the Service), so far as they require Bureau action, are considered in this division.

Yellow-Fever Institute.

In September, 1901, the Surgeon-General submitted to the Department a plan for the organization within the Bureau of a yellow-fever institute—a comprehensive plan for the collective investigation of the questions connected with the etiology and method of spread of this disease. (See pp. 582-585, Annual Report, 1901.) The object of the institute, as stated, is "to collect all facts concerning yellow fever, to designate the specific lines of inquiries to be made, and to make them."

The institute consists of the Surgeon-General, as chairman; the officer in charge of the Bureau division of scientific research, as secretary, and an executive board composed of the above chairman and secretary and chairmen of sections, as follows:

Section A. History and statistics; chairman, the medical officer in charge of the Bureau division of sanitary reports and statistics.

Section B. Etiology; chairman, the director of the hygienic laboratory.

Section C. Transmission; chairman, the medical officer in charge of the Bureau division of domestic quarantine.

Section D. Quarantine and treatment; chairman, the medical officer in charge of the Bureau division of foreign and insular quarantine.

The members of the institute are all officers of the Public Health and Marine-Hospital Service, and others specially qualified, who become members by invitation, such invitations to be issued by order of the executive board. Foreign scientists and health officials are enrolled as corresponding members, all others in the United States and its dependencies as active members. A large number of names have been enrolled in both classes, and the proceedings and transactions of the institute have been published from time to time as bulletins. Those so far published have been from the sections on history and statistics, transmission, and quarantine management, and treatment, and general bulletins, consisting of abstracts from the minutes of the meetings and discussions of the executive board.

Others are in course of preparation and publication. In May, 1902, a working party, composed of medical officers of the Marine-Hospital Service, was dispatched to Vera Cruz, Mexico, to continue experimental observations on the cause of yellow fever and the rôle played by the mosquito in the transmission of the disease. The party are at present engaged in the prosecution of their labors, and results of interest and importance are expected. It is pleasant to be able to record the very cordial reception extended the members of the party by the Mexican officials, and the very ample facilities which have been placed at their disposal.

This modification of the collective-investigation plan of procedure having proved very satisfactory, it is proposed at an early date to extend the institute plan of study to other diseases.

HYGIENIC LABORATORY.

Following is the report of the director of the hygienic laboratory of the Service for the fiscal year ending June 30, 1902:

REPORT OF THE HYGIENIC LABORATORY, BY P. A. SURG. M. J. ROSENAU, DIRECTOR.

HYGIENIC LABORATORY,
Washington, July 3, 1902.

It is a pleasure to be able to announce that the present crowded condition of the laboratory will soon be relieved. Congress appropriated $35,000 March 3, 1901, for a new building. Plans have been drawn by the Supervising Architect and the contracts have just been let. The description of the building and other details will be given in a subsequent report.

The publications of the scientific work accomplished in the laboratory have been continued in the form of special prints, known as laboratory bulletins. The following have been issued during the fiscal year just passed:

Bulletin No. 5.—An investigation of a pathogenic microbe (*B. typhi murium-Danysz*) applied to the destruction of rats. By M. J. Rosenau.

Bulletin No. 6.—Disinfection against mosquitoes with formaldehyde and sulphur dioxide. By M. J. Rosenau.

Bulletin No. 7.—Laboratory technique. Ring test for indol, by S. B. Grubbs and Edward Francis; collodium sacs, by S. B. Grubbs and Edward Francis; and microphotography with simple apparatus, by H. B. Parker.

The laboratory course in pathology and bacteriology given to student-officers has been greatly improved in detail and widened in scope. A complete report upon this subject is being prepared, and will be presented at a subsequent time.

No important additions or radical changes have been made in the laboratory this year, although very much desired, in view of the fact that we hope soon to move into our new building.

Many additions have been made to the reference library of books and reprints on our special subjects, and a card index catalogue, both by subjects and by authors, is being made.

The regular duties of the attendants in the laboratory have been outlined in order to systematize the work and simplify the executive management.

PERSONNEL.

P. A. Surg. Samuel B. Grubbs, Public Health and Marine-Hospital Service, was relieved from duty April 18, 1902, after having been detailed just one year in the laboratory. During this time he reviewed the subjects of pathology and bacteriology, especially those portions which relate to the matters affecting the public health. Doctor Grubbs also pursued investigations along original lines while stationed in the laboratory. His articles upon collodium sacs and on the ring test for indol, done in collaboration with Doctor Francis, will appear as Laboratory Bulletin No. 7, which is now in press. Another article written by Doctor Grubbs upon an organism resembling the *Bacillus pestis* is included in another portion of this report. In addition to the work done by Doctor Grubbs in this laboratory, he has taken technical courses at the Pasteur Institute, Paris, and in other laboratories, and is now well qualified for any work that the Service may call upon him to do in this field.

P. A. Surg. Joseph B. Greene, Public Health and Marine-Hospital Service, was detailed to the laboratory from July 13 to August 3, 1901, during which short time he carried on work with the anatomy and some problems in the life history of the mosquito.

Asst. Surg. Edward Francis, Public Health and Marine-Hospital Service, was detailed to the laboratory August 28, 1901, and has been given the complete course of instruction in pathology and bacteriology outlined for student-officers of the Service. Doctor Francis pursued his work with commendable zeal, and has been of assistance in the work going on in the laboratory, helping especially with the tests on disinfection, the work with tetanus, the examination of vaccines and the care of the stock cultures. In collaboration with Dr. Grubbs he has done original work, which will soon appear in Laboratory Bulletin, No. 7.

Acting Asst. Surg. V. B. Gregory, Public Health and Marine-Hospital Service, was detailed to the laboratory from November 22, 1901, to April 4, 1902, during which time he was given a systematic course in bacteriology, with especial reference to tropical diseases, in view of his detail to Rio de Janeiro, Brazil.

Asst. Surg. John F. Anderson, Public Health and Marine-Hospital Service, was detailed to the laboratory January 28, 1902, and has shown special aptitude for the technical and scientific requirements of laboratory work. Doctor Anderson has assisted in all the work going on in the laboratory and has done research along original lines, especially in relation to tetanus in gelatin, upon which a special report will soon be made.

Asst. Surg. A. J. McLaughlin, Public Health and Marine-Hospital Service, was detailed to the laboratory May 9, 1902, and is taking the systematic course of instruction in bacteriology and pathology, following the lines laid down for the student-officers of the Service. Dr. McLaughlin is working with commendable zeal and energy, and will soon start research work along original lines.

Asst. Surg. H. B. Parker, Public Health and Marine-Hospital Service, was detailed to the laboratory November 12, 1901, for the purpose of special instruction in view of the contemplated work on yellow fever. He has been given special instruction in general bacteriologic and pathologic technique, and has worked more particularly with the biology and pathogenic powers of the *Bacillus icteroides* and related group of organisms.

In order to stimulate interest in the literature upon the subject of bacteriology and pathology, and in order to divide the burden of reading the great mass of matter that is now being printed on these subjects, I devised weekly meetings, at which times the current literature is reviewed and discussed. Each worker in the laboratory is assigned a certain number of the journals and other publications as they appear, and it is his duty to present a critical review of them at the weekly meeting. We have found this to be mutually helpful and a saving of much time.

PLAGUE.

A large part of the work of the year in the laboratory was devoted to the subject of plague, which naturally engaged our attention on account of the way that disease is spreading over the world. The demand for Haffkine prophylactic decreased, and its manufacture in the laboratory was therefore discontinued, although the virulence of our cultures is renewed from time to time, and we are therefore ready at any time and upon comparatively short notice to make and issue a large quantity of this prophylactic substance.

Reports were made upon specimens which were presented to the laboratory from patients who suffered from symptoms which more or less resembled plague, including specimens from quarantine stations at Reedy Island, Mobile, San Diego, and Savannah.

The report of Asst. Surg. S. B. Grubbs, of an organism resembling the *Bacillus pestis*, found in a rat, is appended. * * *

SPECIAL PATHOLOGIC AND BACTERIOLOGIC REPORTS.

Many specimens of blood were examined during the year for the Widal test, for malaria and other purposes, having been sent to the laboratory from the various stations in the Service. A number of specimens of tumors and organs were also sent to the laboratory for study and report, a portion from marine hospitals and some from other contributors.

It is earnestly requested that officers of the Service send tumors and other pathological processes to the laboratory. When requested, histological sections will be sent along with the report. A short summary of the case should always accompany the specimens, which should be plainly labeled. This material is desired for the student-officers of the Service working in the laboratory, as well as for the collection of pathological specimens now being assembled.

EXAMINATION OF THE WATER SUPPLY OF BIRMINGHAM, ALA.

At the request of the city engineer of Birmingham, Ala., which request was indorsed by the city and State boards of health, a bacteriological and chemical examination of the water supply of the city was made. The examination showed the presence of organic matter and nitrates in the general water supply, and that the water of two out of six collecting reservoirs was contaminated with intestinal bacteria.

THE SERVICE EXHIBITS AT BUFFALO AND CHARLESTON.

The director of the hygienic laboratory was, by official instructions, ordered to prepare an exhibit of the Service for display at the Pan-American Exposition, held at Buffalo, N. Y., May to November, 1901, and also at the South Carolina Interstate and West Indian Exposition, held at Charleston, S. C., December 1, 1901, to June 1, 1902.

This exhibit included a display of models of a maritime quarantine station with its pier and pierhead, of a detention camp, and of the disinfecting machinery used by the Service. These models, which were skillfully done by an artist in this city, attracted a great deal of attention and elicited much favorable comment.

The Marine-Hospital Division occupied considerable space in the exhibit in the shape of two rooms, the one being a model of a Service operating room, fitted out completely with modern aseptic surgical furniture, instruments and appliances, the other being a model of a portion of a medical ward, including the bed with its bedside stand, screens, medicine cabinet, and other appliances used for the treatment and comfort of patients in our marine hospitals.

The exhibit also included a rather complete display of disinfecting and sterilizing apparatus used in the public-health work of the Service.

The hygienic laboratory showed a rather complete exhibit of the work which it does in the way of bacteriological and pathological specimens, photographs, etc.

The exhibit was well placed on the main aisle in the Government building and, while it reflected credit upon the Service and its work, fell far short of what such a display should be. There were two reasons for this, first the lack of money, and second the lack of floor space.

The display at Charleston was practically a duplicate of that shown at Buffalo. Both exhibits were in charge of Hospital Steward S. W. Richardson.

As the Service will undoubtedly be called upon to make an exhibit at future large expositions, I have to earnestly recommend that when such is contemplated an early detail be made of one person whose sole duty it will be to organize, assemble, and carry out this matter. Experience has taught that a good exhibit can not be made hurriedly in a few months. It requires the expenditure of much time and energy and careful planning in order to make a creditable display. In this connection the following suggestions have been made:

There should be some central control of the general sanitation of the fair, its water supply, sewage disposal, restaurants, etc. The Public Health and Marine-Hospital Service, from its duties in relation to the public health, could well take the management and supervision of this subject as one of its duties, and could carry it on so as to make an instructive and attractive display of many of the problems of practical sanitation in actual operation. There could be a model filtering plant for the purification of the water supply and a bacteriological laboratory where both the raw water and the filtered product could be analyzed daily in such a way that even those ignorant of the technical details of this special science could see at a glance the danger of the contaminated water, the freedom from danger of the purified water, and the methods by which this work is done.

A similar display could be made of model public water-closets, and a model farm for the disposal of sewage, modeled upon that at Lachère upon the outskirts of Paris. At such a place those interested could see at a glance how sewage material is purified into clear, potable water, and how, in the meantime, its nitrogenous and mineral constituents have been used to fertilize the soil.

Sanitary control of the kitchens and dining rooms of the restaurants so as to prevent the contamination of the food supply with typhoid fever and other diseases by means of flies would make a useful and instructive display of great practical value.

A practical illustration of the methods and value of draining swamp lands in order to eliminate mosquitoes and thereby prevent the infection of malarial and yellow fevers. A further illustration of the methods used to eliminate mosquitoes from habitations.

An isolation ward where any cases of a contagious nature may be cared for until further disposition can be made of them.

A model disinfecting establishment where a practical demonstration may be made daily at a certain hour, showing the process of the operation, and which may also be utilized for the disinfection of such objects as may require it during the construction or progress of the exposition.

A model arrangement for sputum disinfection and disposal. Proper cuspidors and instructive signs giving the danger and the precautions necessary to prevent the spread of tuberculosis, pneumonia, diphtheria, etc.

ILLUSTRATIONS.

Herewith are presented several photographs which very well illustrate the Service exhibit at Buffalo.

A small pamphlet was prepared by the director of the hygienic laboratory, entitled "The United States Marine-Hospital Service." This little brochure was distributed gratis at both the Buffalo and Charleston exhibitions to those who seemed especially interested. (It will be found in this report under the head of "Contributed articles.")

REPORT OF SENIOR PHARMACIST S. W. RICHARDSON.

Public Health and Marine-Hospital Service,
Washington, D. C., July 11, 1902.

Sir: In compliance with your verbal instructions, I have the honor to submit the following report on the exhibit made by the Service at the Pan-American Exposition at Buffalo, N. Y., from May 1, 1901, to November 1, 1901, and the South Carolina Interstate and West Indian Exposition at Charleston, S. C., from December 1, 1901, to June 1, 1902.

In compliance with Bureau orders dated April 17, 1901, I reported to P. A. Surg. H. D. Geddings, and under his direction assisted in the installation of the Government building. On April 30 I was placed in acting charge of the exhibit.

The Government building was opened to the public on May 1 with appropriate ceremonies. The Service exhibit consisted of models of Reedy Island Quarantine Station, Delaware Breakwater Quarantine Station, Detention Camp, at Camp Berry, Fla., a model operating room with furniture and fixtures, a section of a hospital ward with furniture and appliances, a Kinyoun-Francis steam disinfecting chamber, a "traveling-laboratory" equipment, a static electric machine for X-ray demonstration, charts and maps showing locality of and mortality from infectious diseases, tube and plate cultures of bacteria, microphotographs in illuminated stand, a standard medical library, apparatus for disinfection, surgical instruments and appliances in ordinary use, a demonstration of Service methods of keeping clinical records, and the publications of the Service.

The general public were much interested in the display, their remarks showing their appreciation. Physicians, pharmacists, nurses, and hospital attendants spent considerable time inspecting the exhibit and questioned freely. The X-ray demonstration was much in demand, and the method of keeping clinical records was highly commended by all interested in it. At times the number in attendance was more than one demonstrator could properly serve.

Inquiry, of frequent occurrence, was made as to hospital dietary, methods of preparing and serving food, the uses of gas and electricity, as well as ordinary fuel, and as to the best apparatus for kitchen use in a hospital. It is suggested that at future exhibits some attention be paid to this subject.

The exposition was not so largely attended during the first two months as anticipated, but later the number increased.

By order of the Department the exhibit was sent to Charleston for use at the South Carolina Interstate and West Indian Exposition, which opened December 1, 1901. I was directed to assume charge by Department orders dated November 29, 1901, arriving on the day of opening. The exhibit was not finally installed until January 23, 1902, which was due to delay in transit, and other unavoidable circumstances. The attendance was never satisfactory; otherwise the remarks made on the exposition at Buffalo will apply to that of Charleston.

The detail of help for the care of the exhibit was not entirely satisfactory. Owing to a limited appropriation the Service had only the partial services of one man, his time being divided between two exhibits. In Charleston, for the same reason, only one man was employed to care for the whole Treasury Department exhibit. I would earnestly recommend that at future expositions in which the Service may participate that not less than two intelligent and trustworthy hospital attendants be detailed for duty thereat in uniform. They would be of assistance to the officer in charge in minor demonstration as well as in the proper care and preservation of the property. It will then be possible to always have someone in attendance at the exhibit while the building is open to the public, which has not been the case heretofore.

Respectfully,

Samuel W. Richardson,
Senior Pharmacist.

The Director Hygienic Laboratory,
Public Health and Marine-Hospital Service, Washington, D. C.

TUBERCULOSIS.

Much miscellaneous work was done with tuberculosis throughout the year, especially the relation between human and bovine tuberculosis and the relation of human tuberculosis to the various acid-proof bacteria which have lately been discovered.

At the meeting of the American Medical Association at Saratoga, July 10, I presented a short paper relating to this work, and particularly to the "growth of the tubercle bacillus and organisms resembling the tubercle bacillus upon fruits and vegetables." A more complete treatise on this subject will appear in a bulletin of the Hygienic Laboratory.

DISINFECTION AND DISINFECTANTS.

Much work was accomplished throughout the year in an examination of the various substances for their germicidal and antiseptic properties. This topic has such an important relation to practical health work and sanitation that it has been given much time and attention in the laboratory. One of the reports upon this kind of work is herewith presented.

CAR SANITATION.

With your approval it is my intention to continue investigations on the subject of car sanitation. This subject has been worked in a fragmentary way in the hygienic laboratory for a number of years past, and it is now planned to push it to definite conclusion.

The subject will be taken up, not only because it directly relates to matters concerning the public health, with which this laboratory is authorized by law to deal, but on account of the interstate quarantine law, which imposes upon the Service the duty of preventing the spread of epidemic diseases from one State or Territory to another. As our knowledge of the spread of epidemic diseases increases it becomes plainer that the railroad is one of the most fruitful carriers of infection. The topic will be studied on the broadest lines in order to determine how frequently it is necessary to disinfect various kinds of railway coaches, how much real danger there is in the Pullman berth, the toilet room, etc. The question of improving the water-closets upon the passenger coach, disinfecting the contents before it is spread broadcast through the length and breadth of the land, will be given particular attention.

THE MOSQUITO AS A CARRIER OF BACTERIAL INFECTION.

Considerable attention was given throughout the summer to the question whether the mosquito can convey bacterial disease. Experiments were conducted on several lines in order to solve this problem. Special cages were constructed upon the following plan: They were made thoroughly mosquito proof with fine wire netting, sixteen meshes to the inch, and separated by a central partition into two divisions so that the animals exposed could not come in contact in any way with each other. The partition wall, however, had openings on top which allowed the mosquitoes to pass from one division to the other. The healthy animals were exposed on one side of the partition, and in the other division were placed the animals infected with various diseases or cultures exposed in various ways. The mosquitoes were first allowed to feed on these cultures, or to bite the infected animals, and after a variable time were then allowed to fly across the partition and bite the healthy animals. These experiments were conducted with anthrax, very virulent pneumonic coccus, and the *bacillus icteroides*, and in each instance either the *culex pungens*, a mosquito common to this latitude, or the *Stegomyia fasciata*, obtained from Habana and the South Atlantic Quarantine Station, were placed in the cages.

All these experiments resulted negatively, excepting in two instances with anthrax, two white mice dying of that infection after having been exposed to the mosquitoes under the above conditions for several weeks.

It is impossible at the present time, on account of a number of conditions which were not taken into account at the time the experiments were carried out, to draw definite conclusions from our summer's work on this topic. These incomplete facts are presented now, but the work will be continued next summer, when it is hoped definite report can be made on this subject, which is so important.

DISINFECTION AGAINST MOSQUITOES.

In September, 1901, Bulletin No. 6 of the Hygienic Laboratory was issued by the director upon the subject of disinfection against mosquitoes with formaldehyde and sulphur dioxid. The summary and conclusions reached as a result of this work are herewith given.

SUMMARY AND CONCLUSIONS.

Formaldehyde gas is a feeble insecticide. Mosquitoes may live in a very weak atmosphere of the gas overnight. It will kill them, however, if it is brought in direct contact in the strength and time prescribed for bacterial disinfection. For this purpose any of the accepted methods for evolving the gas is applicable, but the methods which liberate a large volume in a short time are more certain than the slower ones.

Direct contact between the insects and the gas is much more difficult to obtain in ordinary room disinfection against mosquitoes than against germs, because the sense of self-protection helps the former to escape from the effects of the irritating gas. They hide in the folds of towels, bedding, clothing, hangings, fabrics, and out-of-the-way places where the formaldehyde gas does not penetrate in sufficient strength to kill them. The gas is polymerized and deposited as paraform in the meshes of fabrics, which prevents its penetration, and large quantities are lost by being absorbed by the organic matter of fabrics, especially woolens. In our tests, whenever the insects were given favorable hiding places, such as in crumpled paper or in toweling, they quickly took advantage of the best place for themselves and thus escaped destruction.

There is a striking analogy between the strength of the gas and the time of exposure necessary to penetrate the fabrics in order to kill mosquitoes, and the strength and time necessary to pentrate in order to kill the spores of bacteria.

Mosquitoes have a lively instinct in finding cracks or chinks where fresh air may be entering the room, or where the gas is so diluted that they escape destruction. They are able to escape through incredibly small openings. Some of the smaller varieties, such as the *stegomyia fasciata* can get through a wire screen having 12 meshes to the inch. Therefore, formaldehyde gas can not be trusted to kill all the mosquitoes in a room which can not be tightly sealed.

It is concluded, that to succeed in killing all the mosquitoes in a closed space with formaldehyde gas, the following definite requirements are essential: A very large volume of the gas must be liberated quickly, so that it may diffuse to all portions of the space in sufficient concentration. The room must have all the cracks and chinks where the insects may breathe the fresh air carefully sealed by pasting strips of paper over them. The room must not contain heavy folds of drapery, clothing, bedding, or fabrics in heaps, or so disposed that the insects may hide away from the full effects of the gas.

Sulphur dioxid is unexcelled as an insecticide. Very dilute atmospheres of the gas will quickly kill mosquitoes. It is quite as efficacious for this purpose when dry as when moist, whereas the dry gas has practically no power against bacteria. Contrary to formaldehyde it has surprising powers of penetrating through clothing and fabrics, killing the mosquitoes, even when hidden under four layers of toweling, in one hour's time, and with very dilute proportions.

This substance, which has so long been disparaged as a disinfectant because it fails to kill spores, must now be considered as holding the first rank in disinfection against yellow fever, malaria, filariasis, and other insect-borne diseases.

THE MALARIAL FEVERS.

I have again to renew the recommendation made by myself and my predecessor in all our previous reports that special work be done upon the subject of malaria, which, after all, probably causes greater havoc, both from a sanitary and economic standpoint, than any other communicable disease in the United States. For this work there is no trouble to obtain material, which is available, unfortunately, in very many sections of the country, and all the forms of the disease could be studied in a limited district. The work done with the mosquito in relation to malaria and the complicated changes which the malarial parasite undergoes should not be taken for granted, but should be confirmed and reported by competent investigators in this country. The Service is now well fitted with officers who have, both by training and by natural aptitude, fitted themselves to carry on work of this character.

DENGUE.

I have also to renew the recommendations made in former years in these reports that scientific investigation on the cause and mode of propagation of dengue be very thoroughly studied, especially in view of the recent findings of Graham at Beirut, Syria, in which he states that dengue is caused by a hæmamœba resembling that of malarial fever, and is transmitted from person to person by the culex mosquito as the intermediate host. While dengue does not kill, it invalids many people during its presence, especially in the Southern States, and accurate diagnosis is of the greatest practical moment in public health work, on account of the clinical resemblance between dengue and yellow fever.

VACCINE VIRUS.

Many samples of vaccine were examined for potency and impurities throughout the year, and a laboratory bulletin upon this subject, with especial reference to glycerin as an addition to vaccine lymph, is being prepared. Our results so far have plainly indicated that the manufacture of vaccines is too important a subject to leave to commercial enterprise without restrictions, and the suggestion has been made that the Government supervise the production of vaccines and carefully analyze and examine this product as it is sold to the physician.

In this connection, the following memorandum which has been prepared states substantially the present status of this question:

Up to the present there is no known method by which vaccine can be accurately standardized, inasmuch as the cause of vaccinia is unknown. The only test of the potency of vaccine virus is the physiological one of inoculating it upon a susceptible animal.

An analysis of certain impurities of vaccine virus may be made by bacteriologic methods. This applies particularly to pathologic organisms, pyogenic cocci, and other virulent micro-organisms.

The only assurance we have at present that a particular virus is free from contamination is our confidence in the manufacturer and the hope that he has paid scrupulous attention to cleanliness in all the details of its production. No vaccine virus should be placed upon the market until it has been carefully tested by approved bacteriologic methods as to its freedom from impurities.

It is of the greatest importance that a scientific commission from the Service should be created, whose object should be the study of vaccinia and variola with a view of discovering their cause.

The following article, which summarizes the results of our work along these lines, was read before the New York Academy of Medicine February 20, 1902, and published in Medicine April 19 of the same year.

DRY POINTS VERSUS GLYCERINATED VIRUS, FROM A BACTERIOLOGIC STANDPOINT.

By M. J. ROSENAU,

Passed Assistant Surgeon and Director of the Hygienic Laboratory, U. S. Public Health and Marine-Hospital Service.

Is glycerinated virus superior to the dry point; that is to say, granting equal immunizing power from the two forms of virus, is the one freer from impurities than the other?

The answer to this question resolves itself almost entirely into a bacteriologic study of the number and kinds of micro-organisms that contaminate vaccine virus and a comparison of those found upon the dry points with those found in the glycerinated pulp. Clinical results can not be depended upon to settle this question because infected "takes" may result from other causes than a contamination of the virus.

Vaccina is a specific disease the cause of which has not been determined.' We are, therefore, working somewhat in the dark. We are compelled to vaccinate our patients with a virus containing micro-organisms other than those causing vaccinia.

The importance of using a virus as pure as possible need not be emphasized here, for we do not want to inoculate our patients with any other infection than the one which protects the individual against smallpox. It is on account of this danger that human virus has been discarded in so many countries, despite the fact that human virus is superior to all other forms so far as the reliability and the duration of its immunizing power are concerned.

The production of bovine virus by propagating it from heifer to heifer is credited to Negri, of Naples, about 1842. It took some years for the advantage of this virus to be appreciated, although practically no other kind is now used in the large communities of Europe and in our own country. The great advantage of bovine virus, in addition to the ease with which it may be procured, is that it absolutely eliminates the possibility of the transmission of syphilis and other infections to which the human family are liable.

Now, although bovine virus is free from the danger of conveying the infectious diseases peculiar to man, it is liable to other equally undesirable contaminations. For instance, in addition to the micro-organisms that are specific for vaccinia, it contains the pus cocci and the bacteria that live normally upon and in the skin of the animal, and these micro-organisms always contaminate bovine virus. It must be evident to anyone who watches the propagation of bovine virus that even the greatest care will not insure its freedom from "foreign" infections, particularly those of the dejecta and the stable. In order to eliminate this danger Dr. Monckton Copeman, in 1891, devised the method of mixing the pulp with sterile glycerin of first quality. The advantages which Copeman claimed for the glycerin was that it not only prevented the growth and multiplication of the bacteria always found in bovine virus, but gradually destroyed those which were present.

Glycerin can hardly be dignified with a place among the antiseptics, although that is the object of adding it to vaccine virus. Bacteria are killed slowly by glycerin, just as they are killed by drying, for the glycerin is supposed to cause death by a process of slow dehydration. So feeble is it, that it requires eleven days to kill streptococci and twenty days to kill diphtheria bacilli. Germs with thicker envelopes resist it indefinitely. It has no action upon endogenous spores at all; in fact, it is a preservative of such infections as tetanus, malignant edema, and the like. As common and readily destroyed an organism as *Staphylococcus albus* may live seven months in glycerinated vaccine virus. It is well known that in diluted form glycerin is a very favorable culture medium.

The effect of mixing glycerin with the virus is to destroy gradually both the bacteria and the vaccine, but fortunately the ordinary pus cocci and nonsporulating bacteria generally succumb before the viability of the vaccine organism is destroyed, and therefore there is an interval when the glycerinated virus will still cause a typical "take," but will contain comparatively few foreign micro-organisms. It is evident that if the glycerinated virus is used before this interval, it has no advantage over the dry point, and if used after this interval it is inert. Therefore, from a theoretic standpoint, glycerinated virus should be freer from impurities if used just at the right time. Manufacturers state that they usually glycerinize the virus from four to six weeks before putting it on the market.

The dry points, on the contrary, are sold as soon as made, and, if kept in a cool place protected from the light, probably remain viable a longer time upon the average than the glycerinated virus under similar conditions. It is well known that pus cocci and the other bacteria which frequently contaminate vaccine virus die quickly when dry. On the contrary, these same bacteria live a comparatively long time in dry vaccine virus, probably on account of the protection of the albuminous matter in which they are embedded.

With these facts in view, we conducted bacteriologic studies of vaccines in order to determine whether the glycerinated virus as sold to the physician is freer from impurities than the dry points. Samples were purchased in the open market, care being taken to buy unbroken original packages from reliable pharmacists who keep the product under proper conditions of light and temperature. The samples were always examined before the time limit, as stated by the manufacturer, expired.

Without going into the details at this time of the technic employed, I will only state that the virus was suspended in a measured quantity of sterile bouillon and agitated so that all the clumps were broken up and as nearly as possible a uniform suspension obtained. The dry points were first softened in the bouillon about an hour and then rubbed clean, always using the usual bacteriologic precautions to prevent any contamination from the outside. The glycerinated virus was mixed with the measured quantity of the bouillon and the capillary tube washed out by drawing the liquid in and out of the tube a number of times. The mixing was done in test glasses of appropriate size and the mixture thoroughly agitated.

This suspension was now planted in agar and plated on petri dishes. No less than three plates were made of each point or capillary tube, 1 or 2 drops of the suspension being planted in the first plate, 5 or 10 drops in the second, and the total quantity remaining into the third plate. In this way the figures give an accurate count of all the colonies that grew from each vaccine examined.

The plates were grown in the incubator at 37° C. and the counts made upon the third day. The counts must not be taken to represent the absolute number of organisms present in vaccine virus, for the virus consists of an inflammatory product very variable in its physical characteristics. Upon dry points it coagulates into a hard film, soluble with difficulty, and mixed with glycerin it always contains little masses, flakes, and particles agglutinated together, that hold enmeshed the micro-organisms. It is practically impossible to ultimately break up these masses. Therefore the suspensions are not uniform and the counts we make are only an approximation. Micro-organisms have a well-known tendency to group or cling together, so that every colony upon an agar plate does not represent one microbe. The figures, as given below, are misleading only in that they give an underestimate of the number of organisms contaminating vaccine virus, and therefore some of the results, as bad as they are, do not fully represent the actual conditions.

Of the 92 samples counted from 8 manufacturers, 41 were dry points and 51 were glycerinated. The results are summarized as follows:

Number of bacteria per point and per tube, arranged numerically.

Dry points.	Glycerinated virus.
13	30
18	84
20	86
27	97
110	111
182	116
219	127
220	138
297	160
450	160
458	170
476	192
516	245
575	246
648	257
847	352
906	369
1,530	747
2,088	768
2,160	1,121
2,876	1,332
2,750	1,414
8,825	1,456
3,475	1,540
3,600	1,592
4,923	1,600
6,240	1,680
6,528	1,700
7,200	1,750
8,024	1,842
9,050	1,912
9,289	2,069
9,688	2,070
9,884	2,100
10,629	2,106
11,200	2,200
12,800	2,263
13,030	2,400
14,826	2,440
15,760	2,578
20,828	2,928
	3,819
	6,249
	6,876
	7,249
	8,000
	10,372
	10,400
	11,232
	17,000
	18,405
197,185	146,149
Average number of bacteria per dry point, 4,809.	Average number of bacteria per glycerinated tube, 2,865.

The capillary tubes containing glycerinated virus vary considerably in capacity; some hold ten and fifteen times as much as others. This fact partly explains the discordance in some of the figures, but is not sufficient to justify the marked discrepancy which we have found existing between tubes from the same package and bearing the same laboratory number as given by the manufacturer.

These studies were not made so much to determine the bacteriologic possibilities of glycerin, as to determine the purity of this form of vaccine matter as sold to the physician upon the open market, compared to the dry point. For this reason samples were purchased from time to time without announcing our intention. These samples were sometimes examined at once and sometimes kept until the time limit as stated by the manufacturer had nearly expired, which partly explains the apparent irregularity of some of the figures.

The number of bacteria have little significance if they are all of a harmless variety; we, therefore, conducted a series of investigations to determine the kinds of micro-organisms found in vaccine. As already mentioned in the above tables, various micrococci of suppuration have been isolated from both the dry points and the glycerinated virus. We have also found several short rods, very virulent for laboratory animals, belonging to the hemorrhagic septicæmia group in the dry points.

We have examined a great number of tubes and points for tetanus, but have been unable to discover this organism. These studies are still in progress, and will be made the subject of a subsequent communication.

We believe the impurities found in the glycerinated virus upon the market are largely due to an over-confidence in the germicidal value of glycerin; operators become careless of contamination, trusting to the glycerin to purify their product. We know glycerin is too feeble in its properties to purify vaccine matter which has initial contamination such as our work indicates.

Before concluding, I desire to ackowledge the work of my colleagues in the laboratory—Dr. Grubbs, Dr. Francis, and Dr. Parker, of the Marine-Hospital Service, who made all the counts and otherwise assisted materially in the preparation of this paper.

SUMMARY.

Of 41 dry points examined we found an average of 4,807 bacteria per point.

Of 51 glycerinated tubes and capsules we found an average of 2,865 bacteria per vaccine. This is in excess of what a good glycerinated virus should contain.

This difference in numbers does not justify the confidence placed in the glycerinated virus over the dry points as found upon the market, judging from the limited number of counts made.

So far as the kinds of organisms are concerned, we found pus cocci in both the dry points and the glycerinated virus.

We think we have demonstrated that some of the glycerinated virus on the market is "green"—that is, not kept a sufficient length of time before it is sold.

From our studies we have concluded that we ought not to discredit glycerinized virus, for we consider the superiority of the virus amply demonstrated, but to condemn the practice of manufacturers who place an unripe product on the market.

Much of the vaccine sold must have a high initial contamination to contain an average of 2,865 bacteria per tube, and it is evident too great a reliance is placed upon the glycerin.

REPORTS OF CONVENTIONS.

The director of the laboratory was detailed upon several occasions to represent the Service at meetings of a number of the medical societies, as well as the Second International Conference of the American States, which met at the City of Mexico during the winter of 1901-2. These details were as follows:

American Public Health Association, Buffalo, N. Y., September 16-20, 1901.

New York State Association of Railway Surgeons, New York, November 14 and 15, 1901.

Conference of Health Officers of the State of Michigan, Ann Arbor, Mich., November 21 and 22, 1901.

Second International Conference of American States, City of Mexico, December 3, 1901, to January 22, 1902.

New York Academy of Medicine, New York, February 20, 1902.

American Medical Association, Saratoga, N. Y., June 10-13, 1902.

Special reports of each meeting have been made and appear elsewhere.

AN ORGANISM RESEMBLING THE BACILLUS PESTIS.

By Asst. Surg. S. B. GRUBBS, Public Health and Marine-Hospital Service,
Assistant in Hygienic Laboratory.

Bacteriologic diagnosis of plague from specimens taken from suspected cases, both of human beings and rats, sent from the various ports of this country, has, since the increased vigilence of the Marine-Hospital Service against this disease, been almost constantly in progress at the Hygienic Laboratory, Washington, D. C.

Happily the majority of these cases have proved negative, but the careful investigation of these specimens, and the isolation of the many organisms present that is necessary to prove absolutely the nonexistence of the *Bacillus pestis*, has brought to light several interesting facts.

The following is cited to show that there are organisms that may be associated with plague, or cases suspected to be plague, that both microscopically and morphologically resemble very closely the plague bacillus, and yet are undoubtedly not the Yersin organism.

On June 22, 1901, the steamer *Carlisle City* came to quarantine at the port of San Diego, Cal., with the following history: The vessel sailed from Hongkong on May 16, and from Yokohama on May 29. On June 6 the sailors' cook was taken sick with what the captain thought to be jaundice, and died three days later. Honolulu was made on June 11, where her freight was disinfected, and she was shored off 8 feet from the dock with rat funnels on the lines. She sailed June 13. Almost immediately sickness began among the crew with a result that in all five deaths occurred, the last one five days before making San Diego. The captain, who considered the disease to be plague, acted most intelligently. He isolated the patients, disinfected their clothing and quarters, and buried the dead at sea with their effects, and kept a very accurate clinical record of each case. Undoubtedly by his efforts he checked the disease. Arriving at port with all well on board, bacteriologic examination had to revert to the rats found dead on board to confirm, if possible, the diagnosis.

Parts of the glands, the lungs, the liver, and spleens of four rats found dead among the cargo were forwarded to this laboratory by Asst. Surg. Hill Hastings. Cultures made from these organs (numbered, respectively, 1, 2, 3, and 4) were injected into rats and guinea pigs. The animals presented no unusual symptoms, none dying except guinea pig No. 3, which died on the second day with evidences of a saprophytic infection easily proved not to be that of plague. The rest remained in good health, and were killed on the eighth to tenth days. Examination revealed nothing suspicious, except in the case of guinea pig No. 2, which presented a picture strikingly similar to that seen after an injection of a pure culture of plague.

The abdominal wall about the site of inoculation was swollen and contained an abscess about the size of a hickory nut, filled with thick green pus. The inguinal glands were somewhat enlarged, but were, however, not hemorrhagic.

The spleen was enlarged, leathery, of light-brown color, and showed many small, white miliary abscesses, apparently all on the surface, but extending a distance corresponding to their width into the substance of the organ.

The liver was somewhat enlarged, of a mahogany color, and showed a certain number of similar foci. The kidneys and lungs were apparently normal.

Cultures taken from these foci, from the substance of the spleen, from the liver, and from the heart's blood all gave, often in pure culture, a short thick bacillus, staining readily with all the ordinary reagents, and presenting in nearly all fields the bipolar appearance. This organism grows in bouillon at ordinary temperatures with the formation of the stalacittes such as most plague cultures show. After being left twenty-four hours the tube would be found perfectly clear, except in its upper eighth or quarter of an inch. This contained the fleecy white growth, from which there hung down about one-half inch one or two projections. Tapping the tube was always sufficient to break up the mass, allowing it to settle slowly to the bottom, after which a new growth collected at the top.

Here then, from a rat suspected to have died of plague, we have obtained a coccobacillus giving a bipolar stain, and growing in bouillon in a manner similar to plague.

Further investigation showed that this bacillus does not liquefy gelatin, that it decolorizes by Gram's solution, does not produce indol, that it is a faculative anærobe, and that while it grows abundantly in glucose and maltose bouillon in twenty-four hours, it produces no gas in that time. In all these respects it resembles entirely the *Bacillus pestis*, but, on the other hand, it is actively motile, and ferments glucose in from forty-eight to seventy-two hours. As to its pathogenicity, as before stated, neither the rat nor guinea pig injected subcutaneously from the first culture had died on the ninth day.

Ot the animals afterwards injected subcutaneously with 1 cc. of the pure culture, 1 guinea pig died and 2 were sacrificed, while of 8 rats injected with from 1 cc. to ⅛ cc., 5 died. The pathological appearance of one of these guinea pigs was normal, except for the abscess and swelling of the abdominal wall, while the other two presented, but to a less extent, the same suspicious lesions noted in the pig injected with the original culture.

In the rats dead or sacrificed nothing unusual could be noted except enlargement of the spleen, and in some cases a hemorrhagic condition of the liver. In nearly every case, however, the germ could be recovered from the spleen, liver, and heart blood.

CONCLUSIONS AND SUMMARY.

From a rat suspected to have died of plague we have isolated an organism that, when stained, resembles the bacillus of Yersin. It is pathogenic for rats in the majority of cases, and sometimes fatal for guinea pigs, giving in them a post-mortem picture resembling that of plague.

Morphologically, it closely resembles the plague organism in most particulars, but it is sharply differentiated from it by its active motility and by its fermenting glucose after forty-eight hours. That a hasty diagnosis of plague might be given when only this bacillus was present is perfectly conceivable, and the above facts are cited in the hope that they may make such a mistake less likely.

We can not say, from the fact that the *Bacillus pestis* was not found in these specimens, that the cases on board the *Carlisle City* were not plague. The clinical histories of the cases undoubtedly point to that disease, and they probably derived their infection from the rats, as was pointed out by Acting Assistant Surgeon McKay. The particular rats, from which the specimens were obtained, might have died of other causes, or, more probably, the animals had been dead and dried up so long before the specimens were taken that all the plague bacilli in them died, for we know from the studies of Rosenau that when dry this organism is not long lived.

It is interesting to note that a pure culture of the organism, described above, kept five months on agar, gives a diffuse clouding in bouillon instead of the characteristic growth described above.

A Short Description of the Mosquito Cycle of Malaria.

By Asst. Surg. H. B. Parker,

Assistant in Hygienic Laboratory.

In the human body two types of malarial organisms are found, one the intracorpuscular which, by its development and sporulation, produces the clinical cycle of malarial fever, and second, an extra corpuscular form with a cycle that is not completed in man, but in an extracorporeal host—the mosquito. These extracorpuscular forms are of two sexes, a male element, or microgamete or flagellated body; this body is fully mature when flagellation takes place, which only happens in the stomach of a mosquito or in shed blood, never in the human body; and second, a female element, or macrogamete or crescent body, which does not change until sexual contact.

After flagella form on the microgamete in the stomach of the mosquito, the flagella separate from the parent body, and coming in contact with a macrogamete fuse, forming the zygote. The zygote penetrates the epithelium of the stomach and begins a series of nuclear divisions, increasing the cell many times in size. This enlarged zygote is called a sporocyst, and the young cells it contains are called sporoblasts; when mature they are known as sporozoites. Each zygote furnishes from 400 to 10,000 sporozoites which, when mature, rupture their own membrane and the walls of the stomach and are set free in the general body cavity; from here the current is toward the salivary glands, to which they gain access in numbers, this gland apparently absorbing from the general body cavity anything contained in this fluid whether animal or vegetable organism or foreign material. Having gained access to the salivary gland these sporozoites follow the current and gain entrance to the lumen and ducts, so that when the insect bites an individual she inoculates that individual with all the sporozoites in the ducts and lumen of the salivary glands.

This cycle requires a period of seven to nine days for its completion, and having once begun it is probable that as long as this mosquito lives it will carry infection to every individual bitten. When one takes into consideration that a mosquito's stomach may contain 50 zygotes in all stages of development and each zygote furnishes as many as 10,000 sporozoites, and that one sporozoite inoculated in an individual will sooner or later produce the disease, as there seems to be no attempt at phagocytosis, one can readily see the advantage of protecting fever patients from mosquitoes, and the damage a single infected *anopheles* can do in a thickly populated community.

In all diseases caused by coccidia and conveyed by an extra corporeal host the cycle of development is probably analogous to the above.

A COMPARISON OF THE EXTRA CORPOREAL CYCLE OF MALARIA WITH THAT OF YELLOW FEVER.

In malaria the cycle of development from the gamete to the sporozoite requires from seven to nine days; in the experiments of Reed with yellow fever it was not possible to produce the infection in less than twelve days. If the disease is produced by coccidia, one would expect a cycle of development from the gamete to the sporozoite that would be apparent either with the naked eye or low powers. Reports seem to confirm the statement that there are no structural changes in the stomach wall of a stegomyia infected with yellow fever. The absence of this cycle from a biological point of view seems to preclude the possibility of the organism belonging to the group of coccidia.

Is it possible for the stegomyia to become the host of a vegetable organism?

From a structural point there is no reason why a motile vegetable organism can not find its way from the stomach to the salivary gland. There would be one place of resistance or delay; that would be the penetration of the stomach wall itself. Once within the general body cavity it would find its way both by its own motility and the natural circulation of fluids in that direction to the salivary glands. This assertion seems very well proven by the experiments of Doctor Portier and Professor Beyer, they having succeeded in transmitting the *B. Icteroides* from dog to dog, from dog to rabbit, and rabbit to dog by infecting mosquitoes, by permitting them to bite a dog that had been infected with *B. Icteroides*, and having kept the mosquitoes alive a number of days permitted them to bite another dog, from the blood of which the *B. Icteroides* was secured, the dog having been made very sick with the mosquito infection.

If, then, it is possible for a mosquito to transmit a vegetable organism, is it possible to trace the organism through the cycle? In reply to this question I would say no. Unless the organism in question has some specific staining reaction its demonstration would be either accidental or impossible, as the mosquito is normally the host for many vegetable parasites from which it could not be distinguished.

The presence of *B. Icteroides* in the capillary circulation from the earliest period of the disease, the apparent absence of all other forms of organism, the possibility of transmitting this organism through the mosquito to another animal make a chain of evidence stronger than exists around any other organism, either animal or vegetable.

Why are *anopheles* and *stegomyia* favorable extra corporeal hosts while other species are not.

This whole subject hinges upon the life cycle of these two varieties of mosquitoes. While it is necessary for albumen to maturate ova in these varieties, it requires a number of days for this maturation to take place, in the *stegomyia* requiring about seven days, in *anopheles* about six, so that in both instances more than half the cycle is completed before, under the most favorable conditions—that is, numerous artificial breeding places—the ova are deposited. If, perchance, through confinement by not having access to water the insect has no opportunity to ovaposit, the period between the ingestion of albumen and the laying of eggs is continued over many days, or, if the insect hybernates in the meantime, over several months.

In the culicidæ the tendency of a female is to die shortly after ovapositing. In *anopheles* and *stegomyia* this is not so; both varieties perhaps naturally live an average existence of ten days after the first deposit of eggs, permitting normally the extra corporeal cycle to be completed whether there is an opportunity to lay eggs on the sixth or seventh day or not.

It is these two peculiarities then—first, the period of six or seven days required for the maturation of the ova after the ingestion of albumen, and second, a normal existence of ten days or more after ovapositing—that permit these two varieties of insects in their native state to take the rôle of an extra corporeal host.

THE STEGOMYIA FASCIATA.

By P. A. Surg. H. B. PARKER.

General description.

This mosquito is medium in size and is characterized by four longitudinal silvery stripes on the dorsal surface of the mesonotum. Its general features are its dark color, almost black, with clumps of silvery scales on the mesonotum laterally and the distinct silvery and black scale marking of the abdominal segments and tarsal bases. This contrast in color makes this mosquito the most easily recognized of all the species. The wings present nothing characteristic, all the scales being black.

GENERAL ANATOMY.

Females.—Proboscis black and pointed, about the same length as in Culicidæ; palpi black and short; salivary glands are of the compound tubular type, situated in the mesothorax anteriorly between the œsophagus and the muscle plates of the back. This gland and the ovary are the most highly specialized of all the organs. It derives its secretion probably by absorption directly from the general body or lymphatic cavity, with which it is in contact. It is this feature that permits the gland to take up any organism, whether animal or vegetable, that penetrates the stomach wall. The kidney plays a minor part in this absorption, except when large quantities of fluid are to be disposed of, as after a full meal. The stomach in an unfed insect lies usually in two folds; when distended it becomes tubular in shape. The intestines consist of several convolutions lined with epithelium.

The ovary lies just behind the stomach, and after the ingestion of albuminous food fully develops into a large mass of epithelial cells; an ovaduct leads down to the receptaculum seminis, where sexual contact takes place. The kidneys are located near the dorsal surface posteriorly and consist of a row of malpighian bodies and a medulla.

As far as known, animal or vegetable organisms have not been demonstrated within this organ.

PREVALENCE AS TO SEASON.

Stegomyiæ make their appearance in New Orleans toward the last of February or the 1st of March, but do not become active until the end of May. The June generation is very large and well distributed throughout the city. Toward the end of June and beginning of July they become less numerous, increasing again in September and October, and then dying out as the weather becomes colder.

TIME OF FLIGHT.

Even when *stegomyiæ* are present in numbers observation shows that they have, to a greater or less extent, regular hours of flight. For instance, in the early morning they are seldom seen; they appear in numbers about 10 a. m., disappearing about 1 p. m.; they are again noted particularly between the hours of 4 and 6. Even when numerous I have never succeeded in taking this variety after 8 p. m. This observation is not in accord with older observations that communication with towns infected with yellow fever between the hours of 8 a. m. and 4 p. m. on sunny days is free from danger. On the contrary, it would seem the opposite.

OVULATION.

After fecundation the instinct of this insect is to ovaposit. This requires, as described above, a meal of albuminous food, in order that the ova may go on to maturation. The time required for maturation of the ova, when the insect is free, can not be definitely stated; in captivity one may say that from one to ten days are required, with an average of four or five days. I have fed 5 *stegomyia* daily for over a week before they ovaposited—an act they all performed about the same time. The ova are deposited on the surface of the water, either singly or end to end. There is no tendency to the formation of the "boat-shaped" egg masses of culex pungens. They are brownish when first deposited, but rapidly become black; in numbers they vary from 40 to 150. Under favorable conditions these eggs hatch in from six to thirty-six hours; under unfavorable conditions it may take many days.

LARVAL STAGE.

Young *stegomyia* larva resembles the larva of the culicidæ in general outline. They may be distinguished, however, by a jet black siphon and two black breathing tubes running from the siphon to the mesothorax. While breathing they hang usually between an angle of 60° and 80°, almost vertical with the surface. The larvæ of culicidæ hang at an angle of 45° to 60°, while anopheles larva lie horizontally with and on the surface. While feeding, these larvæ show great activity, going deeply into the jar searching for food, which, when found, they eat greedily. As a food they specially prefer the spores of spirgyra. The small aquatic crustaciæ are their greatest enemies, and unless special precautions are taken to free them from the spirogyra furnished as food the larvæ will gradually disappear from the jar.

The insect passes through the larval stage normally in about nine days. Toward the end of that time the thoracic segments begin to swell, two small breathing tubes appear on the dorsal surface of the thorax, the caudal siphon closes, and the larva becomes a pupa. Up to this time the coat has been shed about three times; in delayed development probably more.

The pupa stage is quite short, being about three days. During this stage the insect is lighter than water, and in consequence floats on the surface. When desirous of obtaining food it uses its own exertions to go to the bottom of the jar; when finished it becomes quiescent and by gravity slowly rises to the surface.

The pupal stage finished, the imago or fully-formed mosquito emerges from its last shell and is ready to commence a new cycle.

A male insect is usually found near by, awaiting the liberation of a female. When that occurs they fly away together in sexual contact. When that act is finished the function of the male is completed, and in a few hours he dies.

It will be seen that but twelve days elapse between the laying of the eggs and the fully developed mosquito. This is shorter than *anopheles* by six to eight days, and about two days longer than the commonest and most rapid breeding mosquito known, the *culex pungens;* so that aside from its disease-conveying properties, in season, it becomes one of the greatest pests of its kind.

THE HABITAT OF THE STEGOMYIA

The *stegomyia* is essentially a house mosquito, and is practically never found further than flying distance from a habitation. Carriage houses and wood-working shops are favorite places for them to live, probably because of the continuous presence of animal life and artificial breeding place in these localities. When not in flight they conceal themselves in cracks or behind lumber, or, another favorite resting place, the shaded side of dark wearing apparel hanging around the room.

NATURAL FOODS.

The adult mosquito feeds as far as known from every substance from which albumen can be derived. It naturally prefers sources that furnish the greatest amount of albumen with the least exertion, animal life furnished this nutrition to a greater extent than vegetable life, so much so that it is probable that if deprived of animal food, the species would either become so diminished in numbers as not to be a pest, or probably become extinct. In other words, animal albumen seems to be essential to the proper maturation of the ova. The adult insect can be kept alive for several weeks in vessels containing moisture and small bits of banana or other ripe fruits. The stegomyia will not survive normally longer than twenty days unless during hybernation, when they will live through the winter. The recrudescence of yellow fever is best explained by this fact. An infected mosquito may hybernate through the winter; it requires new albumen to maturate the eggs. The first or subsequent bites start a new focus for the disease. In the natural state most of the animal food is derived from reptiles, aquatic animals, dogs, horses, chickens, and birds.

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